TalkAnytime®
Click-to-Talk Media Server

User Guide for Voice/IP Gateways

Digital Models: TA2410 & TA3010

User Guide

S000424, Rev. A

Digital Click-to-Talk Media Servers

Models TA2410 & TA3010

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Chapter 1: Overview

About This Manual

This manual is about Voice-over-IP products made by Multi-Tech Systems, Inc. It describes two digital TalkAnytime® units, models TA3010 and TA2410, that allow you to accept incoming audio/voice calls over the Internet or other IP network.

The table below describes the vital characteristics of the various models in the TalkAnytime® product family. The TalkAnytime product family is closely related to the MultiVOIP product family and this manual contains many references to MultiVOIPs and 'voips' in general.

How to Use This Manual. ***In short, use the index and the examples.***
When our readers crack open this large manual, they generally need one of two things: information on a very specific software setting or technical parameter (about telephony or IP) *or* they need help when setting up phonebooks or URLs for their TalkAnytime® units. The index gives quick access to TalkAnytime® settings and parameters. It's detailed. Use it. The best way to learn about phonebooks is to wade through examples like those in our chapter on Phonebook and URL Configuration. Finally, this manual is meant to be comprehensive. If you notice that something important is lacking, please let us know.

Additional Resources. The MultiTech web site (www.multitech.com) offers both a list of Frequently Asked Questions (the MultiVOIP/TAT FAQ) and a collection of resolutions of issues that MultiVOIP and TalkAnytime® users have encountered (these are Troubleshooting Resolutions in the searchable Knowledge Base).

TalkAnyTime® Product Family							
Description / Model	**TA 2410**		**TA 3010**		**TA 24-48**		**TA 30-60**
Function	T1 digital click-to-talk VOIP unit		E1 digital click-to-talk VOIP unit		T1 expansion card; doubles capacity when installed in a TA2410 unit		E1 expansion card; doubles capacity when installed in a TA3010 unit
Capacity	24 channels		30 channels		24 channels		30 channels
Chassis/ Mounting	19" 1U rack mount		19" 1U rack mount		Sold as kit to be installed into open card slot in TA2410.		Sold as kit to be installed into open card slot in TA3010.
Description / Model	**TA 810**		**TA 410**				
Function	analog click-to-talk voip unit		analog click-to-talk voip unit				
Capacity	8 channels		4channels				
Chassis/ Mounting	19" 1U rack mount		19" 1U rack mount				

Introduction to TalkAnyTime®
Digital Click-to-Talk Media Servers
(TA2410 & TA3010)

VOIP: The Free Ride. The analog TalkAnyTime units (TA2410 and TA3010) use Voice-Over-IP gateway technology to allow free incoming audio communication over the Internet or other IP network. To make this free voice service available , you simply connect the TalkAnyTime unit to your telephone equipment and your existing Internet connection.

Figure 1-1: TA-2410/3010 Chassis

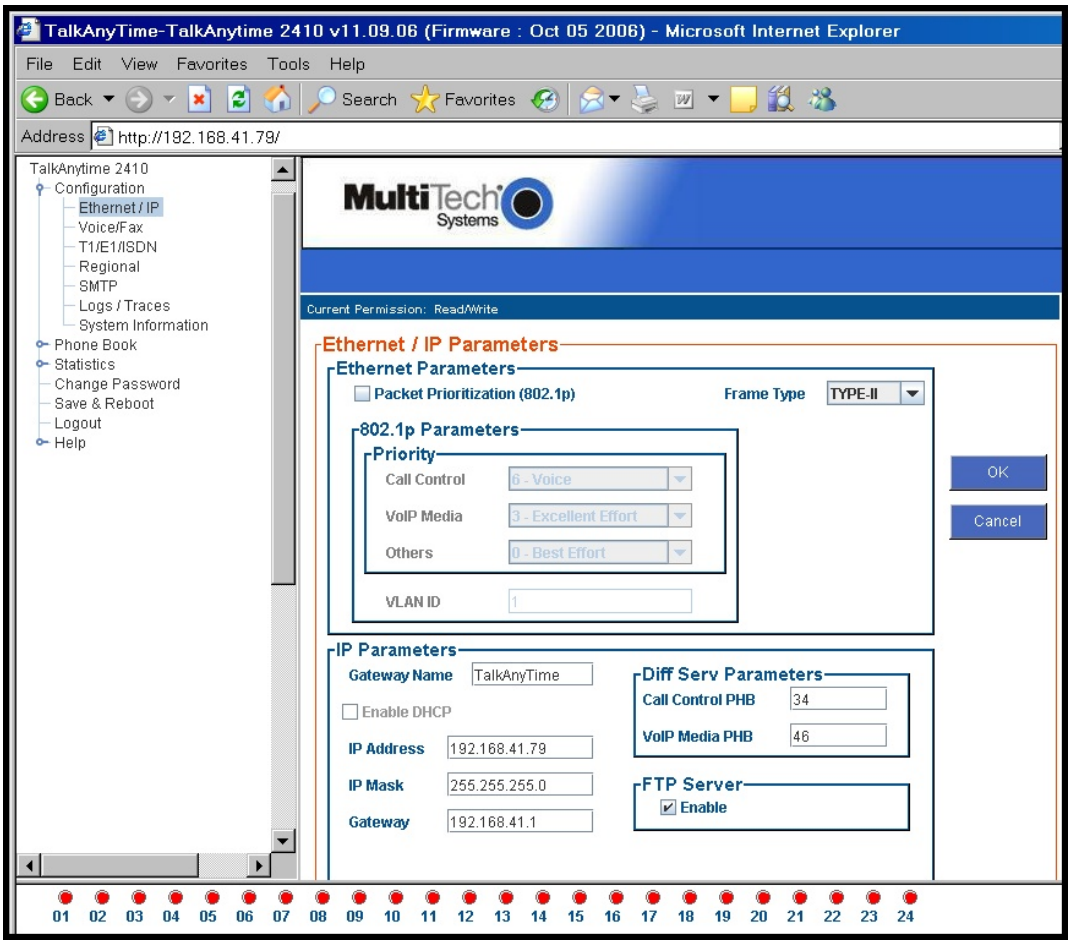
Capacity. TalkAnyTime® model TA3010 is a thirty-channel E1 unit (Euro digital telephony; 30 time-division multiplexed channels on a single conductor) that can carry 30 simultaneous audio conversations. The model TA2410 is a twenty-four-channel unit (US digital telephony; 24 time-division multiplexed channels on a single conductor) that can carry 24 simultaneous audio conversations.. Both of these units have a 10/100Mbps Ethernet interface, a local command port for local configuration using a Windows GUI, and a remote configuration modem port for remote configuration using a Windows GUI. Both the TA2410 and the TA3010 are expandable to double capacity (from one to two T1/E1 lines) if an expansion card (TA24-48 or TA30-60) is added.

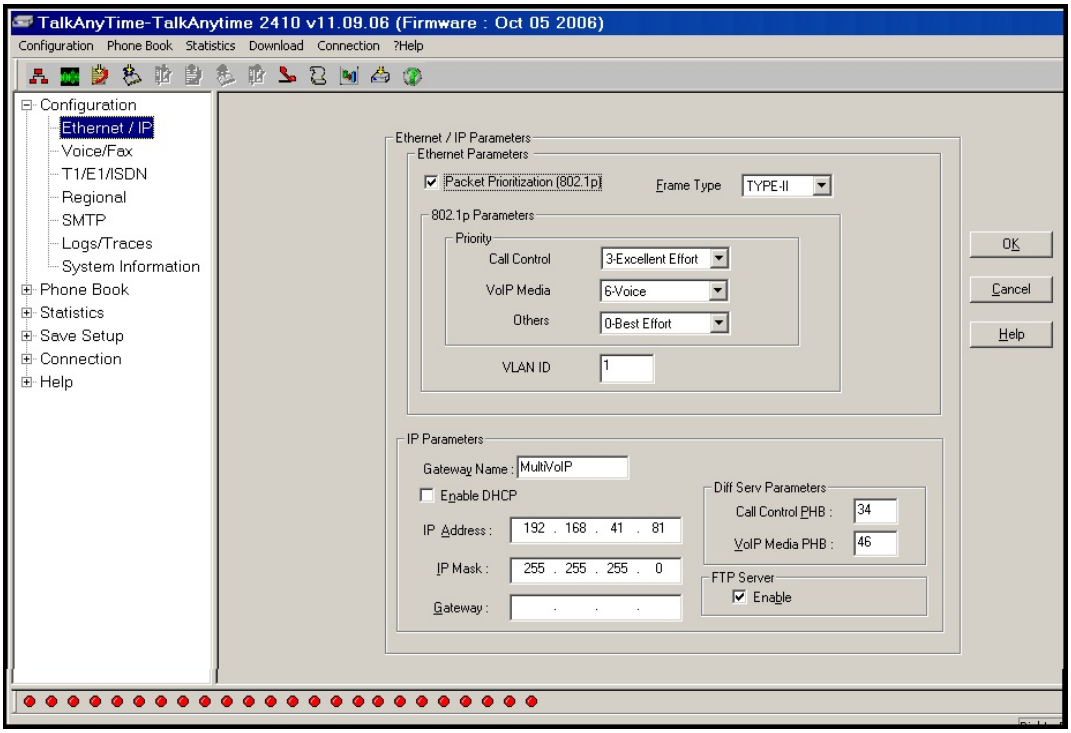
Mounting. Mechanically, the TA2410 and TA3010 units are designed for a one-high industry-standard EIA 19-inch rack enclosure. The product must be installed by qualified service personnel in a restricted-access area, in accordance with Articles 110-16, 10-17, and 110-18 of the National Electrical Code, ANSI/NFPA 70.

Phone System Transparency. These TalkAnyTime units inter-operate with a telephone switch or PBX, acting as a switching device that directs voice calls originating on an IP network into a PBX or key telephone system. The TalkAnyTime units have "phonebooks," directories that determine from whom calls may be received. The TalkAnyTime unit can be set to give the caller a dial tone that allows her/him to dial extensions within a PBX or key telephone system.

Management. Configuration and system management can be done locally or remotely with either of two graphical user interfaces (GUIs). One is a Windows GUI and the other is a web-based GUI that operates over the Internet or other IP network. After an IP address has been assigned with the Windows GUI, other configuration can be done either locally or remotely using either the TalkAnyTime web browser GUI or its Windows GUI. The Windows GUI is included on the Product CD; the web-based GUI is built into the TalkAnytime unit at the factory and requires no installation.

While the web GUI's appearance differs slightly, its contents and organization are essentially the same as that of the Windows GUI.



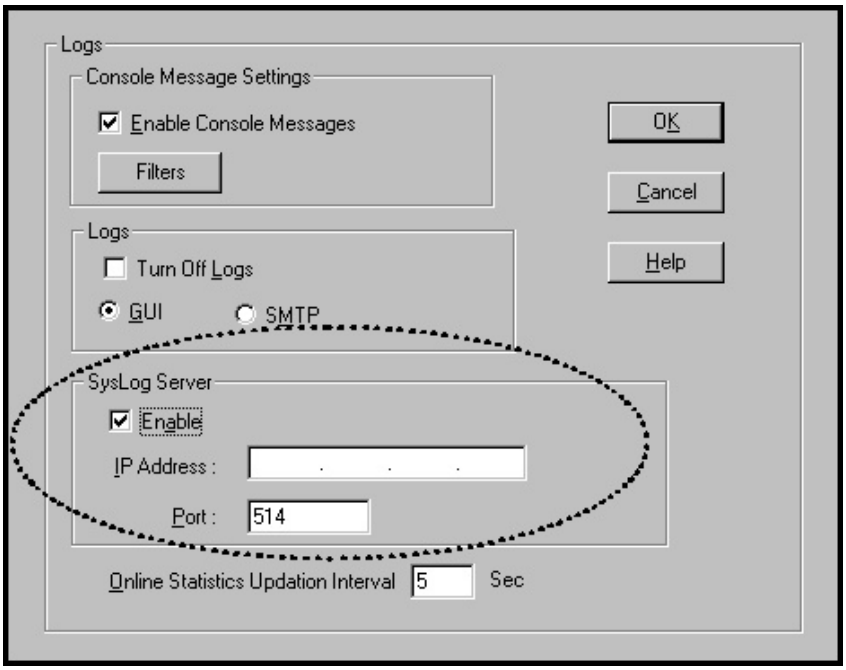


The primary advantage of the web GUI is remote access for control and configuration. The controller PC and the TalkAnyTime® unit itself must both be connected to the same IP network and their IP addresses must be known.

Once you've begun using the web browser GUI, you can go back to the TalkAnyTime® Windows GUI at any time. However, you must log out of the web browser GUI before using the TalkAnyTime® Windows GUI.

Similarly, you must close the Windows GUI before opening the web GUI. The two GUIs cannot be used simultaneously else a conflict or error will occur.

Logging of System Events. MultiTech has built SysLog Server functionality into the software of the TalkAnyTime units. SysLog is a *de facto* standard for logging events in network communication systems.



The SysLog Server resides in the TalkAnyTime unit itself. To implement this functionality, you will need a SysLog client program (sometimes referred to as a "daemon"). SysLog client programs, both paid and freeware, can be obtained from Kiwi Enterprises, among other firms. See www.kiwisyslog.com. SysLog client programs essentially give you a means of structuring console messages for convenience and ease of use.

MultiTech Systems does not endorse any particular SysLog client program. SysLog client programs by any qualified provider should suffice for use with TalkAnyTime units. Kiwi's brief description of their SysLog program indicates the typical scope of such programs. "Kiwi Syslog Daemon is a freeware Syslog Daemon for the Windows platform. It receives, logs, displays and forwards Syslog messages from hosts such as routers, switches, Unix hosts and any other syslog enabled device. There are many customizable options available."

Digital TalkAnytime LED Descriptions

T1 Front Panel LEDs

The TA2410 and TA24-48 both use a common main circuit board or motherboard. Consequently the LED indicators are the same for both.

Active LEDs. The TA2410 front panel has two sets of identical LEDs. In the TA2410 as shipped (that is, without an expansion card), the left-hand set of LEDs is functional whereas the right-hand set is not.

When the TA2410 has been upgraded with an TA24-48 kit, the right-hand set of LEDs will also become active.

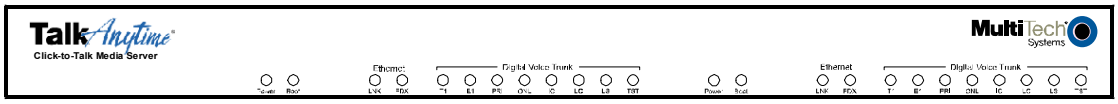


Figure 1-2: TA2410 LEDs

T1 LED Descriptions. The descriptions below apply to the digital T1 TalkAnytime units. The TA2410 has two sets of LEDs, one for the single board shipped inside the TA2410 unit, and a second set for an expansion board that can be purchased (TA24-48). As viewed from the front of the TA2410, it is the left group that is active and that presents feedback about the operation of the TA-2410 unit. If a TA24-48 expansion card is added to the TA2410, the second group of LEDs, beginning with the second "Power" LED, become operational with respect to the second T1 TalkAnytime circuit card.

T1 LED Descriptions

TA2410 Front Panel LED Definitions	
LED NAME	**DESCRIPTION**
Power	Indicates presence of power.
Boot	After power up, the Boot LED will be on for about 10 seconds while the TA2410 is booting.
LNK	Link/Activity LED. This LED is lit if Ethernet connection has been made. It is off when the link is down (i.e., when no Ethernet connection exists). While link is up, this LED will flash off to indicate data activity.
FDX	Full-Duplex & Collision LED. This LED indicates whether the Ethernet connection is half-duplex or full-duplex (FDX) and, in half-duplex mode, indicates occurrence of data collisions. LED is on constantly for full-duplex mode; LED is off constantly for half-duplex mode. When operating in half-duplex mode, the LED will flash during data collisions.
T1	Indicates that the unit is a T1 TalkAnytime model.
E1	E1. Not supported.
PRI	PRI. On if T1 line is of ISDN-Primary-Rate type.
ONL	Online. This LED is on when frame synchronization has been established on the T1/E1 link.
IC	IC LED is on when Internal Clocking is selected in T1/E1 configuration.
LC	Indicates Loss of Carrier.
LS	Indicates Loss of Signal.
Test	For testing purposes only.

E1 Front Panel LEDs

The TA3010 and TA30-60 both use a common main circuit card or motherboard. Consequently, the LED indicators are the same for both.

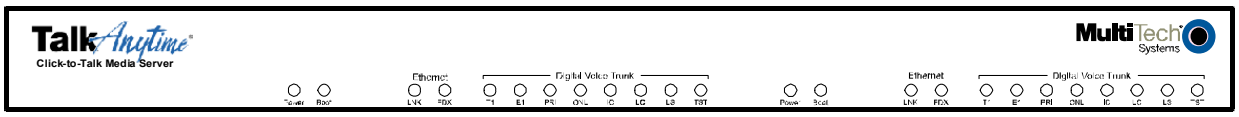


Figure 1-4: TA3010 LEDs

Active LEDs. The TA3010 front panel has two sets of identical LEDs. In the TA3010 as shipped (that is, without an expansion card), the left-hand set of LEDs is functional whereas the right-hand set is not.

When the TA3010 has been upgraded with an TA30-60 kit, the right-hand set of LEDs will also become active.

E1 LED Descriptions

TA3010 Front Panel LED Definitions	
LED NAME	**DESCRIPTION**
Power	Indicates presence of power.
Boot	After power up, the Boot LED will be on for about 10 seconds while the TA3010 is booting.
LNK	Link/Activity LED. This LED is lit if Ethernet connection has been made. It is off when the link is down (i.e., when no Ethernet connection exists). While link is up, this LED will flash off to indicate data activity.
FDX	Full-Duplex & Collision LED. This LED indicates whether the Ethernet connection is half-duplex or full-duplex (FDX) and, in half-duplex mode, indicates occurrence of data collisions. LED is on constantly for full-duplex mode; LED is off constantly for half-duplex mode. When operating in half-duplex mode, the LED will flash during data collisions.
T1	T1. Not supported (see below).
E1	E1. When lit, indicates that unit is configured for E1 operation. It is possible for the TA3010 to be internally re-configured for T1 operation. However, this is not recommended because this change would leave one of the unit's five primary circuitry sub-units unused. If T1 operation is desired, it is far more efficient to use a TA2410 unit than to re-configure the TA3010 unit.
PRI	PRI. On if E1 line is of ISDN-Primary-Rate type.
ONL	Online. This LED is on when frame synchronization has been established on the T1/E1 link.
IC	IC LED is on when Internal Clocking is selected in T1/E1 configuration.
LC	Indicates Loss of Carrier.
LS	Indicates Loss of Signal.
Test	For testing purposes only.

Command Computer Requirements

The computer on which the TalkAnytime unit's configuration program is installed must meet these requirements:

- must be IBM-compatible PC with MS Windows operating system;
- must have an available COM port for connection to the TalkAnytime unit (or, for computers with USB2.0 ports but lacking serial ports, the computer must be fitted with a USB2.0-to-serial adapter);
- must be connected to your local network (Ethernet) system, and
- must have an available serial COM port (or USB2.0 port if applicable).

However, this PC does not need to be connected to the TalkAnytime unit permanently. It only needs to be connected when local configuration and monitoring are done. After an IP address for the TalkAnytime unit has been set with the Windows GUI, all configuration and monitoring functions can be done remotely via the IP network (using the TalkAnytime web GUI) on any computer that can run a modern web browser.

Work-Around Allowing Use of Web GUI Only. The default IP address of the TalkAnytime unit as shipped from the factory is 192.168.3.143. By installing the up-to-date Java program from the TalkAnytime CD and temporarily resetting the IP address of the command computer to 192.168.3.x, the TalkAnytime unit's built-in- web GUI can be contacted and its IP address can be set as needed. If this is done, all subsequent configuration can be done using the TalkAnytime web GUI and the command computer would not need a serial COM port. However, under such an arrangement, the command computer would remain unable to use the TalkAnytime Windows GUI because contact with the Windows GUI requires either a COM port or the USB2.0-to-serial adaptor arrangement.

Client Computer Requirements

To make an incoming call using TalkAnytime, the computer must meet the requirements described in the table below.

Category	Requirement
Operating System	Windows 98 or Windows XP
Browser	Internet Explorer 5.0 or higher
Audio Hardware	Microphone & Speaker (in any form)
O.S. Settings	Headset or microphone/speaker combo must be activated and not pre-empted by any other audio hardware or software.
Browser Settings	Popup Blocking must be disabled at least for the IP address at which the TalkAnytime unit is operating. Activex controls must be enabled.

In terms of audio hardware, many combinations are possible. In any event, the computer must have both a microphone and an audio output device and they must be activated. A headset that includes both a microphone and a speaker (connected to the appropriate jacks on the computer's sound card) would meet this requirement. The computer might have a built-in microphone and built-in or extension speakers and such a combination would also meet this requirement.

Specifications

Specs for Digital T1 TalkAnytime Units

Digital T1 TalkAnytime Specifications		
Parameter ……/Model	**TA2410**	**TA2410 w/ TA24-48 Expansion Card**
Operating Voltage/Current	100-240 VAC 1.2 - 0.6 A	100-240 VAC 1.2 - 0.6 A
Mains Frequencies	50/60 Hz	50/60 Hz
Power Consumption	17 watts	27 watts
Mechanical Dimensions	1.75”H x 17.4”W x 8.75”D 4.5cm H x 44.2 cm W x 22.2 cm D	1.75”H x 17.4”W x 8.75”D 4.5cm H x 44.2 cm W x 22.2 cm D
Weight	7.1 lbs. (3.2 kg)	7.5 lbs. (3.4 kg)

Specs for Digital E1 TalkAnytime Units

Digital E1 TalkAnytime Specifications		
Parameter ……/Model	**TA3010**	**TA3010 w/ TA30-60 Expansion Card**
Operating Voltage/Current	100-240 VAC 1.2 - 0.6 A	100-240 VAC 1.2 - 0.6 A
Mains Frequencies	50/60 Hz	50/60 Hz
Power Consumption	17 watts	27 watts
Mechanical Dimensions	1.75”H x 17.4”W x 8.75”D 4.5cm H x 44.2 cm W x 22.2 cm D	1.75”H x 17.4”W x 8.75”D 4.5cm H x 44.2 cm W x 22.2 cm D
Weight	7.1 lbs. (3.2 kg)	7.5 lbs. (3.4 kg)

Installation at a Glance

The basic steps of installing your TalkAnytime unit involve

- unpacking the unit,
- connecting the cables,
- configuring it using management software (TalkAnytime Configuration software),
- making phonebook entries to determine routing of incoming calls,
- establishing a TalkAnytime URL that includes certain operating parameters and placing a link to that URL on a website, and
- confirming connectivity on an incoming call.

This process results in a fully functional click-to-talk system.

Related Documentation

The TalkAnytime *User Guide* (the document you are now reading) comes in electronic form and is included on your system CD. It presents in-depth information on the features and functionality of Multi-Tech's digital TalkAnytime products. Chapter 2 of this manual consists of "Quick Start Instructions" meant to get the product up and running quickly with a simple configuration.

A printed *Cabling Guide* is also included with the product. Its purpose is to help get the unit's cables connected properly.

The CD media is produced using Adobe Acrobat™ for viewing and printing the user guide. To view or print your copy of a user guide, load Acrobat Reader™ on your system. The Acrobat Reader is available as a free download from Adobe's Web Site (below) and the TalkAnytime CD has a link to that site.

www.adobe.com/prodindex/acrobat/readstep.html

This TalkAnytime User Guide is also available on Multi-Tech's Web site at:

http://www.multitech.com

Viewing and printing a user guide from the Web also requires that you have the Acrobat Reader loaded on your system. To select the TalkAnyTime User Guide from the Multi-Tech Systems home page, click **Documents** and then click **TalkAnytime** in the product list drop-down window. All TalkAnyTime documents will be displayed. You can then choose *User Guide* to view or download the **.pdf** file.

The TalkAnytime CD also includes, as PDF files, single-page descriptions for end-users about how to use TalkAnytime. One document pertains to calls directed to a phone pool. A second document pertains to incoming calling where the caller can, after connection, dial specific extensions within the organization's PBX. A third document pertains to use of the TalkAnytime by trusted parties who are allowed full access to the PBX including PSTN access.

Entries (organized by model number) in the "knowledge base" and 'troubleshooting resolutions' sections of the MultiTech web site (found under "Support") constitute another source of help for problems encountered in the field.

Chapter 2: Quick Start Instructions

Introduction

This chapter will get your TalkAnytime up and running quickly.
More detailed treatment of setup topics can be found in the "Technical Configuration" and "Phonebook Configuration" chapters of this manual.

Safety Warnings

Lithium Battery Caution

A lithium battery on the voice/fax channel board provides backup power for the timekeeping capability. The battery has an estimated life expectancy of ten years.

When the battery starts to weaken, the date and time may be incorrect. If the battery fails, the board must be sent back to Multi-Tech Systems for battery replacement.

Warning: There is danger of explosion if the battery is incorrectly replaced.

Safety Warnings Telecom

1. Never install telephone wiring during a lightning storm.
2. This product must be disconnected from power source and telephone network interface when servicing.
3. This product is to be used with UL and cUL listed computers.
4. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
5. Use caution when installing or modifying telephone lines.
6. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
7. Do not use a telephone in the vicinity of a gas leak – not even to report a gas leak.
8. To reduce the risk of fire, use only a UL-listed 26 AWG or larger telecommunication line cord.
9. Never install a telephone jack in a wet location unless the jack is specifically designed for wet locations.

TalkAnytime Startup Tasks

Task	Summary
● **Collecting Phone/IP Details (*vital!*)**	The TalkAnytime must be configured to interface with your particular phone system and IP network. To do so, certain details must be known about those phone and IP systems.
● **Placement**	Decide where you'll mount the unit.
● **Command/Control Computer Setup: Specs & Settings**	Some modest minimum specifications must be met. A data connection to the TalkAnytime unit (whether via serial port, USB2.0-with-adaptor, or web-based) must be made.
● **Hookup**	Connect power, ground, phone, and data cables per diagram.
● **Software Installation**	This is the configuration program. It's a standard Windows software installation.
● **Phone/IP Starter Configuration**	You will enter phone numbers and IP addresses. You'll use default parameter values where possible to get the system running quickly. Use "Config Info CheckList" (page 26).
● **Phonebook/URL Starter Configuration**	The phonebook is where you specify how calls will be routed. A special URL determines how the TalkAnytime will interact with your web server.
● **Connectivity Test**	You'll find out if your TalkAnytime system can receive phone calls from visitors to your web site. That means you're up and running!
● **Troubleshooting**	Detect and remedy any problems that might have prevented connectivity.

Phone/IP Details *Absolutely Needed* Before Starting the Installation

The TalkAnytime will interface with both the IP network and the phone system. You must gather information about the IP network and about the phone system so that the TalkAnytime can be configured to operate with them properly. A summary of this configuration information appears on page 26 ("Config Info CheckList").

Gather IP Information

➳	*Ask your computer network administrator.*	
	IP Network Parameters: Record for this TalkAnytime unit.	
	• IP Address Note: The default IP address of TalkAnytime units is 192.168.3.143.	
	• IP Mask	
	• Gateway	
	• Domain Name Server (DNS) Info (optional)	
	• Determine whether or not 802.1p Packet Prioritization will be used.	

T1 Telephony Parameters (for TA2410)

The following parameters must be known about the PBX or telco central office equipment to which the T1 TalkAnytime unit will connect:

➳	**T1 Phone Parameters** *Ask phone company or PBX maintainer.*	*Info needed to operate:* **TA2410**
	T1 Parameters: Record for this TalkAnytime unit.	
	• Which frame format is used? ESF___ or D4___	
	• Which CAS or PRI protocol is used? _____	
	• Clocking: Does the PBX or telco switch use internal or external clocking? _____ Note that the setting used in the TalkAnytime unit will be the opposite of the setting used by the telco/PBX.	
	• Which line coding is used? AMI___ or B8ZS___	

Write down the values for these T1 parameters. You will need to enter these values in the "T1/E1/ISDN Parameters" screen in the Configuration section of the TalkAnytime software.

E1 Telephony Parameters (for TA3010)

The following parameters must be known about the PBX or telco central office equipment to which the E1 TalkAnytime unit will connect:

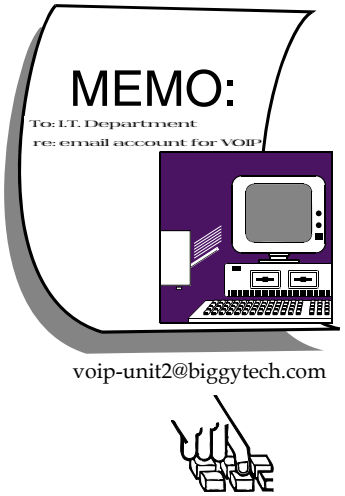
➳	**E1 Phone Parameters** *Ask phone company or PBX maintainer.*	*Info needed to operate:* **TA3010**
	E1 Parameters: Record for this TalkAnytime unit.	
	• Which frame format is used? Double Frame_____ MultiFrame w/ CRC4_____ MultiFrame w/ CRC4 modified_____	
	• Which CAS or PRI protocol is used? _____	
	• Clocking: Does the PBX or telco switch use internal or external clocking? _____ Note that the setting used in the TalkAnytime unit will be the opposite of the setting used by the telco/PBX.	
	• Which line coding is used? AMI___ or HDB3___	
	• Pulse shape level?: (most commonly 0 to 40 meters)	

Write down the values for these E1 parameters. You will need to enter these values in the "T1/E1/ISDN Parameters" screen in the Configuration section of the TalkAnytime software.

Phone/IP Details Often Needed/Wanted

Obtain Email Address for TalkAnytime

(for email call log reporting)

required if log reports of TalkAnytime call traffic are to be sent by email	**Optional**
SMTP Parameters Preparation Task: Ask Mail Server administrator to set up email account (with password) for the TalkAnytime unit itself. Be sure to give a unique identifier to each individual TalkAnytime unit. Get the IP address of the mail server computer, as well.	

Config Info CheckList

Type of Config Info Gathered	TalkAnytime Configuration screen on which to enter Config Info	Info Obtained √	Info Entered
IP info for TalkAnytime unit ● IP address ● Gateway ● DNS IP (if used) ● 802.1p Prioritization (if used)	Ethernet/IP Parameters		
Frame Format (Choices: ESF, D4, F4, SLC96)	T1/E1/ISDN Parameters (TA2410 only)		
Frame Format (Choices: Double Frame, Multi-Frame w/ CRC4, Multi-Frame w/ CRC4 Modified)	T1/E1/ISDN Parameters (TA3010 only)		
CAS Protocol (Choices: FXS Loop Start, E&M Wink, E&M Wink w/ Dial Tone, FXO Ground Start, FXO Loop Start, FXS Ground Start, E&M Immediate, MFR2-China, Clear Channel)	T1/E1/ISDN Parameters		
ISDN-PRI Protocol (only if ISDN-PRI is used) (Choices: Network, Terminal)	T1/E1/ISDN Parameters		
Clocking (Choices: Internal, External)	T1/E1/ISDN Parameters		
Line Coding (Choices: AMI, B8ZS)	T1/E1/ISDN Parameters		
Pulse Shape Level (Choices: 0 – 40 m)	T1/E1/ISDN Parameters		
Country Code	Regional Parameters		
Email address for voip (optional)	SMTP Parameters		
Reminder: *Be sure to* **Save Setup** *after entering configuration values.*			

Placement

Mount your TalkAnytime unit in a safe and convenient location where cables for your network and phone system are accessible. Rack-mounting instructions are in *Chapter 3: Mechanical Installation & Cabling* of the User Guide.

Command/Control Computer Setup (Specs & Settings)

The computer used for command and control of the TalkAnytime
(a) must be an IBM-compatible PC,
(b) must use a Microsoft operating system,
(c) must be connected to your local network (Ethernet) system, and
(d) must have an available serial COM port.

The configuration tasks and control tasks the PC will have to do with the TalkAnytime are not especially demanding. Still, we recommend using a reasonably new computer. The computer that you use to configure your TalkAnytime need not be dedicated to the TalkAnytime after installation is complete.

COM port on controller PC. You'll need an available COM port on the controller PC. You'll need to know which COM port is available for use with the TalkAnytime (COM1, COM2, etc.). If your command computer has only USB2.0 ports and no serial ports, you will need a USB2.0-to-serial adaptor.

Work-Around Allowing Use of Web GUI Only. The default IP address of the TalkAnytime unit as shipped from the factory is 192.168.3.143. By installing the up-to-date Java program from the TalkAnytime CD, temporarily resetting the IP address of the command computer to 192.168.3.x, and connecting both to the same physical Ethernet network, the TalkAnytime unit's built-in- web GUI can be contacted and its IP address can be set as needed. If this is done, all subsequent configuration can be done using the TalkAnytime web GUI and the command computer would not need a serial COM port. Therefore, in the case of a computer lacking a serial port, no USB2.0-to-serial adaptor would be needed. However, under such an arrangement, the command computer would remain unable to use the TalkAnytime Windows GUI because contact with the Windows GUI requires either a COM port or the USB2.0-to-serial adaptor arrangement. (If you use this work-around, you must be sure to re-set your command PC to its original IP address afterwards.)

Client Computer Requirements

To make an incoming call using TalkAnytime, the computer must meet the requirements described in the table below.

Category	Requirement
Operating System	Windows 98 or Windows XP
Browser	Internet Explorer 5.0 or higher
Audio Hardware	Microphone & Speaker (in any form)
O.S. Settings	Headset or microphone/speaker combo must be activated and not pre-empted by any other audio hardware or software.
Browser Settings	Popup Blocking must be disabled for the IP address of the TalkAnytime unit. (Popup Blocking need not be disabled globally.) Activex controls must be enabled.

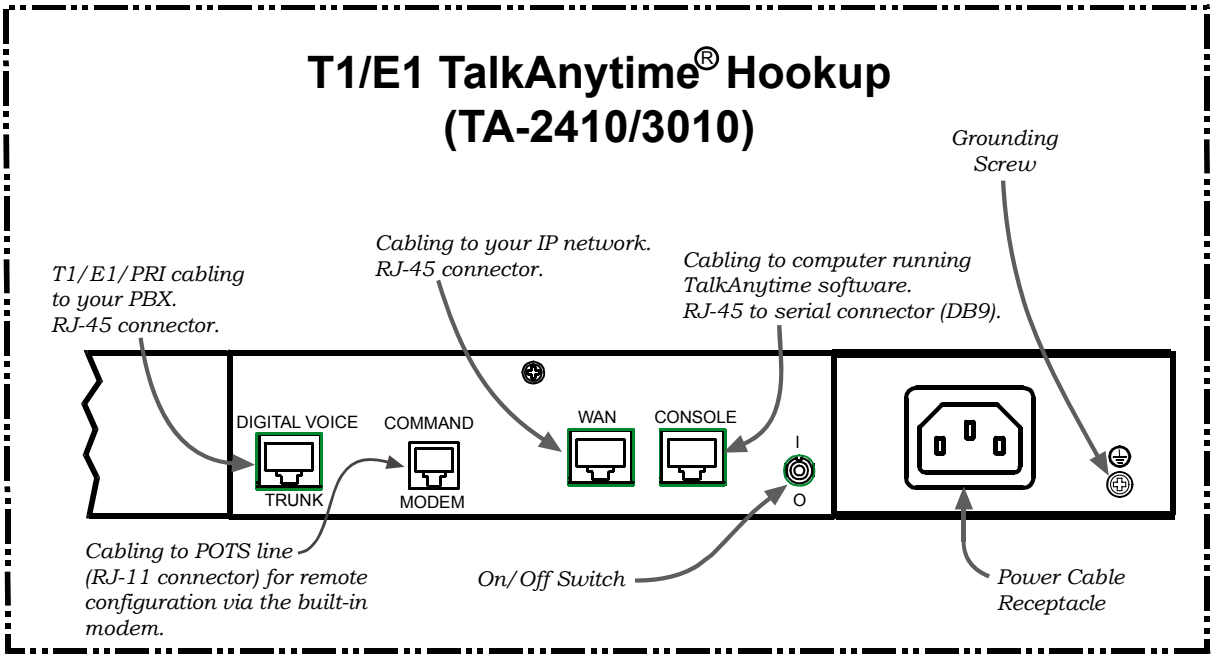
In terms of audio hardware, many combinations are possible. In any event, the computer must have both a microphone and an audio output device and they must be activated. A headset that includes both a microphone and a speaker (connected to the appropriate jacks on the computer's sound card) would meet this requirement. The computer might have a built-in microphone and built-in or extension speakers and such a combination would also meet this requirement.

End-User Information

This chapter documents three ways in which the TalkAnytime unit could make toll-free calling available for end-users. On the Product CD, we present descriptions of these three applications in separate, single-page files to explain these applications to end-users. We intend that these files be made available by hyper-link from the web page at which end-users will access TalkAnytime. The files are listed below.

- TalkAnytime Client Pool-Call Primer
- TalkAnytime Client Specific-Extension Primer
- TalkAnytime Client Dial-Thru Primer

Quick Hookup for TA2410 & TA3010



Install TalkAnytime Configuration Software onto Command PC

For more details, see *Chapter 4: Software Installation* in User Guide.

1. TalkAnytime unit must be properly cabled. Power must be turned on.
2. Insert TalkAnytime CD into drive. Allow 10-20 seconds for Autorun to start. If Autorun fails, go to **My Computer | CD ROM drive | Open.** Click **Autorun** icon.
3. At first dialog box, click **Install Software**.
4. At 'welcome' screen, click **Next**.
5. Follow on-screen instructions. Accept default program folder location and click **Next.**
6. Accept default icon folder location. Click **Next**. Files will be copied.
7. At completion screen, click **Finish**.
8. At the prompt "Do you want to run TalkAnytime Configuration?," click **No**. Software installation is complete.

Phone/IP Starter Configuration

Full details here: *Technical Configuration* chapter in User Guide

1. Open the TalkAnytime program:
   Start | **TalkAnytime** *xxx* | **Configuration**.

   Note: If you used the "Work-Around" on page 27 to operate using the TalkAnytime web GUI only, skip to step 4E.

2. Go to **Configuration** | **Ethernet/IP**. Enter the IP parameters for your TalkAnytime unit. Activate Packet Prioritization (802.1p) if desired. For details, see the "Technical Configuration" chapter of the *User Guide*.

3. Do you want to configure and operate the TalkAnytime unit using the web browser GUI? (It has the same functionality as the local Windows GUI, but offers remote access.)
   If NO, skip to step 5. If YES, continue with step 4.

4. **Web Browser GUI Setup (Optional)**. To do configuration and operation procedures using the web browser GUI, you must first set it up. To do so, follow these steps. (The browser used must be Internet Explorer 6.0 or above; or Netscape 6.0 or above; or FireFox 1.0 or above.)

A. Be sure an IP address has been assigned to the TalkAnytime unit (this must be done in the TalkAnytime Windows GUI).	**E**. Open web browser. (Note: The PC being used must be connected to and have an IP address on the same IP network that the TalkAnytime is on.)
B. Save Setup in Windows GUI.	**F**. Browse to IP address of TalkAnytime unit.
C. Close the TalkAnytime Windows GUI.	**G**. If username and password have been established, enter them when prompted by the TalkAnytime unit.
D. Install Java program from TalkAnytime product CD. (Must be Java Runtime Environment 1.4.2_01 or above.) *NOTE: Required on first use of Web Browser GUI only.*	**H**. Use web browser GUI to configure or operate the TalkAnytime unit.
Need more info?	See "Web Browser Interface" in *Operation & Maintenance* chapter of **User Guide** (on CD).

   Once you've begun using the web browser GUI, you can go back to the TalkAnytime Windows GUI at any time. However, you must log out of the web browser GUI before using the TalkAnytime Windows GUI.

5. Go to **Configuration** | **Voice/Fax**. Select **Coder** | "Automatic." At the right-hand side of the dialog box, click **OK**. If you know any specific parameter values that will apply to your system, enter them. Click **Copy Channel**. Select **Copy to All**. Click **Copy**. At main Voice/Fax Parameters screen, click **OK** to exit from the dialog box.

6. Enter telephone system information.

   Go to **Configuration** | **T1/E1/ISDN Parameters**. Enter parameters obtained from phone company or PBX administrator.

7. Go to **Configuration** | **Regional Parameters**. Select the **Country/Region** that fits your situation. Click **OK** and confirm. Click **OK** to exit from the dialog box.

Phone/IP Starter Configuration (continued)

8. Go to **Configuration | Regional Parameters**. In the **Country Selection for Built-In Modem** field (drop-down list), select the country that best fits your situation. (This may not be the same as your selection for the **Country/Region** field. The selections in the **Country Selection for Built-In Modem** field entail more detailed groupings of telephony parameters than do the **Country/Region** values.) Click **OK**.
9. Do you want the phone-call logs produced by the TalkAnytime to be sent out by email (to your Administrator or someone else)?
   If NO, skip to step 11.
   If YES, continue with step 10.

10. Go to **Configuration | SMTP**.
    SMTP lets you send phone-call log records to the TalkAnytime Administrator by email. Select **Enable SMTP**.
    You should have already obtained an email address for the TalkAnytime itself (this serves as the origination email account for email logs that the TalkAnytime can email out automatically).

    Enter this email address in the "Login Name" field.
    Type the password for this email account. Click **OK**.

    Enter the IP address of the email server where the TalkAnytime's email account is located in the "Mail Server IP Address" field.

    Typically the email log reports are sent to the TalkAnytime Administrator but they can be sent to any email address. Decide where you want the email logs sent and enter that email address in the "Recipient Address" field.

    Whenever email log messages are sent out, they must have a standard Subject line. Something like "Phone Logs for TalkAnytime N" is useful. If you have more than one TalkAnytime unit in the building, you'll need a unique identifier for each one (select a useful name or number for "N"). In this "Subject" field, enter a useful subject title for the log messages.

    In the "Reply-To Address" field, enter the email address of your Administrator.

11. Go to **Configuration | Logs**.
    Select "Enable Console Messages."

    To allow log reports by email (if desired), click **SMTP**. Click **OK**.

    To do logging with a SysLog client program, click on "SysLog Server – Enable" in the **Logs** screen. To implement this function, you must install a SysLog client program. For more info, see the "SysLog Server Functions" section of the *Operation & Maintenance* chapter of the **User Guide**.

12. Go to **Save Setup | Save and Reboot**. Click OK. This will save the parameter values that you have just entered.

    The TalkAnytime unit's "BOOT" LED will light up while the configuration file is being saved and loaded into the TalkAnytime. Don't do anything to the TalkAnytime until the "BOOT "LED is off (a loss of power at this point could cause the TalkAnytime unit to lose the configuration settings you have made).

END OF PROCEDURE.

Inbound Phonebook

1. Open the TalkAnytime program.
   (**Start** | **TalkAnytime xxx** | **Configuration**)
2. Go to **Phone Book** | **Inbound Phonebook** | **Add Entry**.
3. In the "Remove Prefix" field, enter the PBX extension to which you want to direct the incoming TalkAnytime calls.
4. In the "Add Prefix" field, enter the same digits as were entered in the "Remove Prefix" field.
5. In the "Channel Number" field, enter "Hunting." A "hunting" value means the TalkAnytime unit will assign the call to the first available channel.

   If desired, specific channels can be assigned to specific incoming calls (i.e., to any set of calls received with a particular incoming dialing pattern).
6. In the "Description" field, enter an identifier (letters and/or digits) that describes the destination of the incoming TalkAnytime calls. The identifier entered in this field *must match* the identifier used in the **Service** field of the TalkAnytime URL (see the "TalkAnytime URL Configuration" section below). The description should make the routing of calls easy to understand. (40 characters max.)
7. Repeat steps 2-6 for each inbound phonebook entry. As noted above, each channel of the TalkAnytime unit can be configured separately, have its own values in the "Remove Prefix" and "Add Prefix" fields and its own "Description" value. Or all channels can be configured alike. When all entries are complete, go to step 8.
8. Click **OK** to exit the inbound phonebook screen.
9. Click on **Save Setup**. Highlight **Save and Reboot**. Click **OK**.

Your starter inbound phonebook configuration is complete.

TalkAnytime URL Configuration

End users will access the TalkAnytime by clicking on an icon on a web site. The web server must include a URL link expression that not only directs the caller to the TalkAnytime unit but also specifies values for several other parameters (four parameters are required; two are optional).

The general form of the URL expression is as follows:

TalkAnytime URL Command Line		
http://*a.b.c.d*/tat.cgi?Service=*string1*&Protocol=*n*&Codec=*q*&SC=*w*&Packetization=*y*&Digits=*z*		
Configuration Parameter Involved	**Portion of URL in question**	**Comment**
TalkAnytime IP Address	where *a*, *b*, *c*, and *d* are the IP address octet numbers; Values: 0 to 255	
Service	where *string1* is a variable; Values: any letters/numbers; *no spaces, periods, commas, or symbols*; 40 characters max.	This value must match the value of the *Description* field in the Inbound Phonebook.
Protocol	where *n* is a variable; Values: TCP or UDP	
Codec	where *q* is a variable; Values: G711A, G711U, G723	
Silence Compression	where *w* is a variable; Values: ON, OFF	Optional parameter. If omitted, remove the entire expression "&SC=*w*" from URL.

TalkAnytime URL Command Line *(cont'd)*	
http://*a.b.c.d*/tat.cgi?Service=*string1*&Protocol=*n*&Codec=*q*&SC=*w* &Packetization=*y*&Digits=*z*	

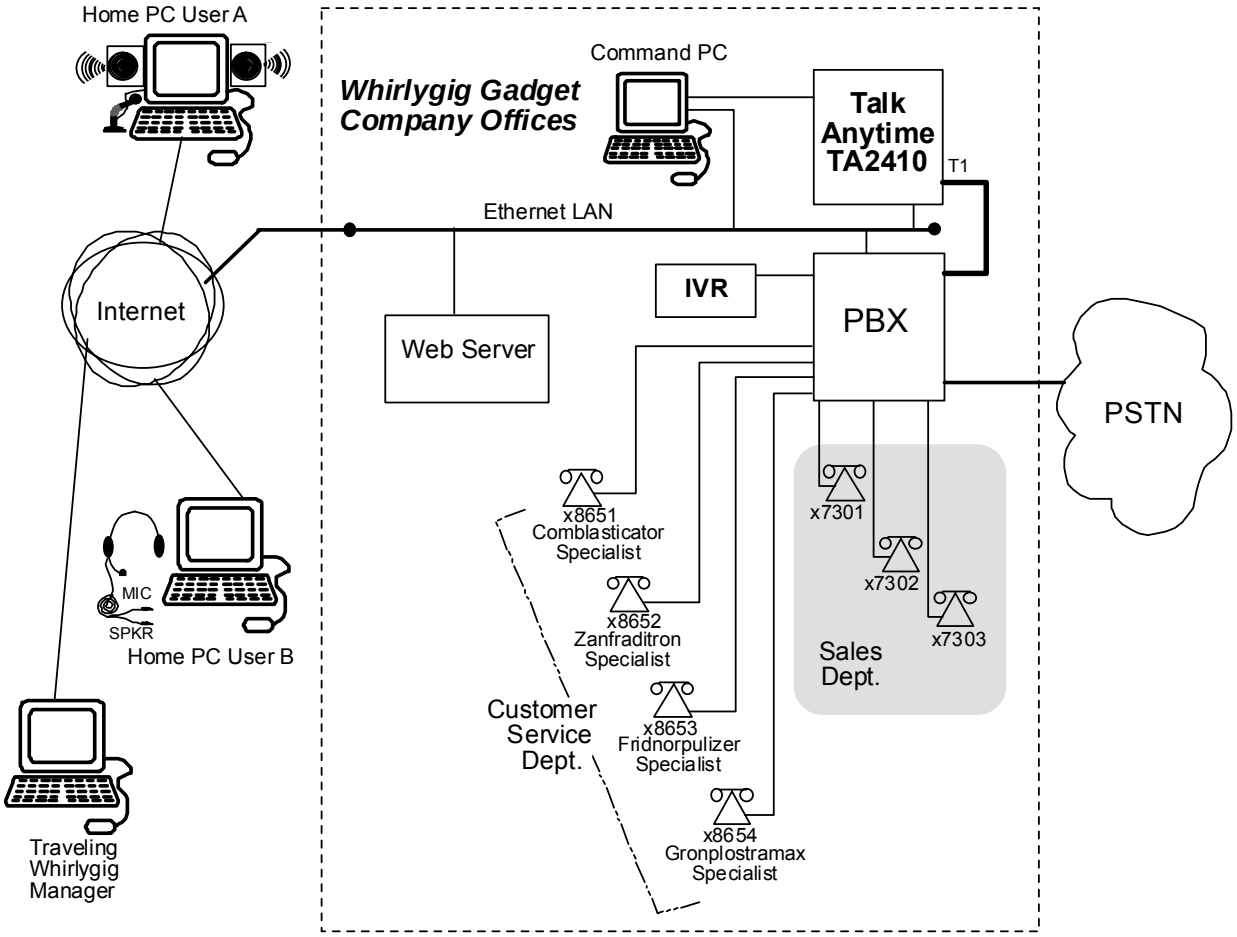
Configuration Parameter Involved	Portion of URL in question	Comment
Packetization	where *y* is a variable; Values: 30, 60, 90, & 120 (for G723); 10, 20, 30, 40, 50, 60, 70, 80, & 90 (for G711A & G711U).	Optional parameter. If omitted, remove the entire expression "&Packetization=*y*" from URL.
Digits	where *z* is a variable; Values: Yes, No	When Digits=No, the end user can use the TalkAnytime keypad to dial only after connection has been made. When Digits=Yes, TalkAnytime keypad is available immediately.
allowed variant of tat.cgi?	tatfrm.cgi?	Eliminates black background behind TalkAnytime user screen.
Note:	All non-italicized characters in the URL expression are fixed literal characters that must be included verbatim. As noted above, the **tat.cgi?** expression has an allowed variant.	

Use of phonebook entries and URL command lines is illustrated in the ***TalkAnytime System Examples*** section that follows.

TalkAnytime System Examples

Introduction

The following example shows how the TalkAnytime unit operates in a specific telecommunications system.



In this system, the TalkAnytime unit is connected to a PBX system. Incoming calls are directed to two different departments, the Sales Department (where all call recipients are peers and it is satisfactory for the incoming caller to reach any one of them) and the Customer Service Department (where each call recipient is a specialist). We show 3 callers. Two are customers; the computer of one is equipped with a microphone/speaker headset; the computer of the other has external speakers and an external microphone. The third caller is an employee of the Whirlygig Gadget Company, a trusted party who has instructions on how to use the TalkAnytime unit to reach the public phone system (PSTN) as well as other Whirlygig employees through the PBX.

Example Types. We will show a configuration of TalkAnytime settings that allows 3 different types of calls:

(a) calls into a phone pool,

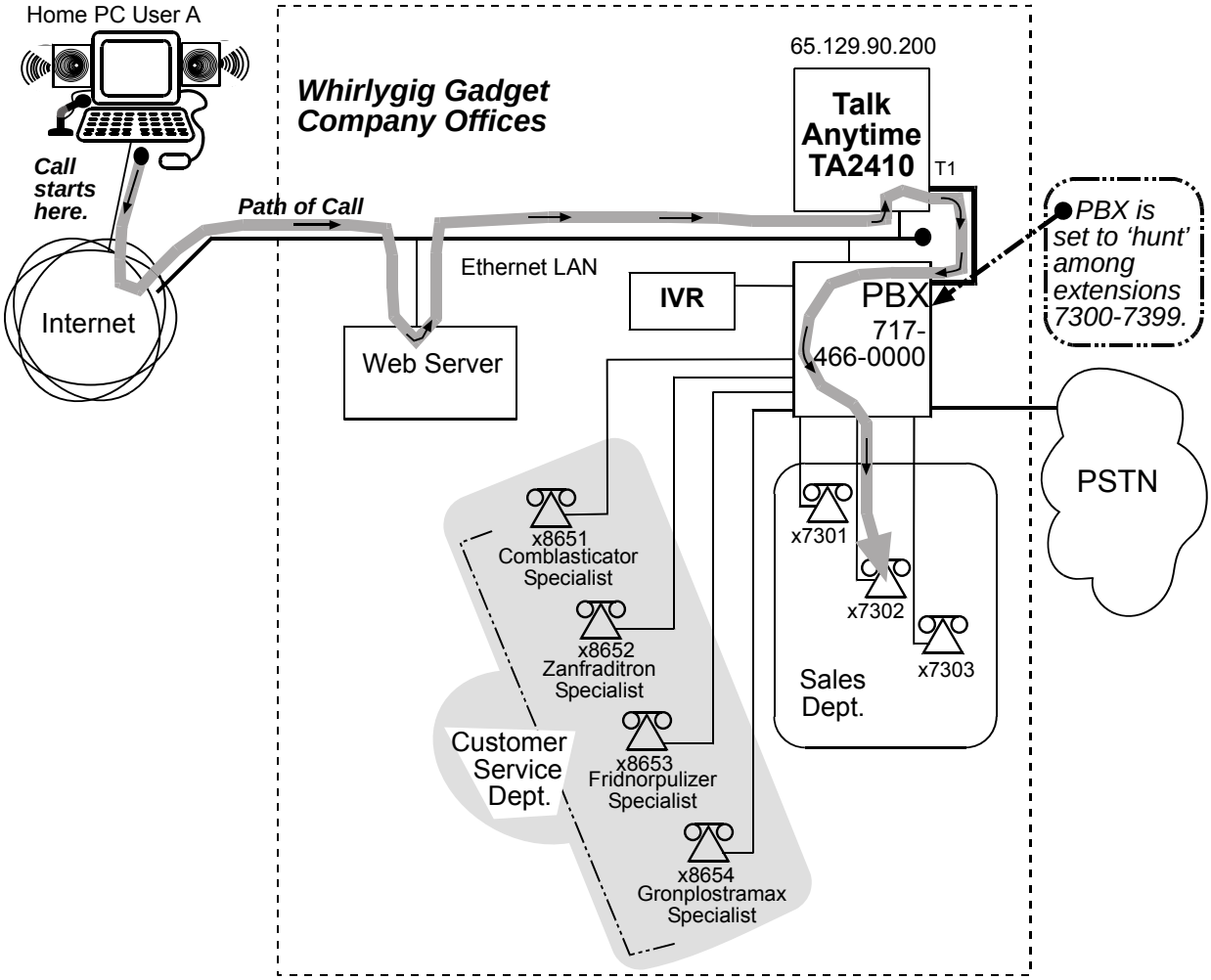
(b) calls directed to specific individual phones through an IVR (a voice recording device connected to a PBX and that plays a recorded message and allows callers to dial different extensions with DTMF signals from phone or keypad), and

(c) calls by a trusted party into an institutional PBX and out into the local public phone system (PSTN).

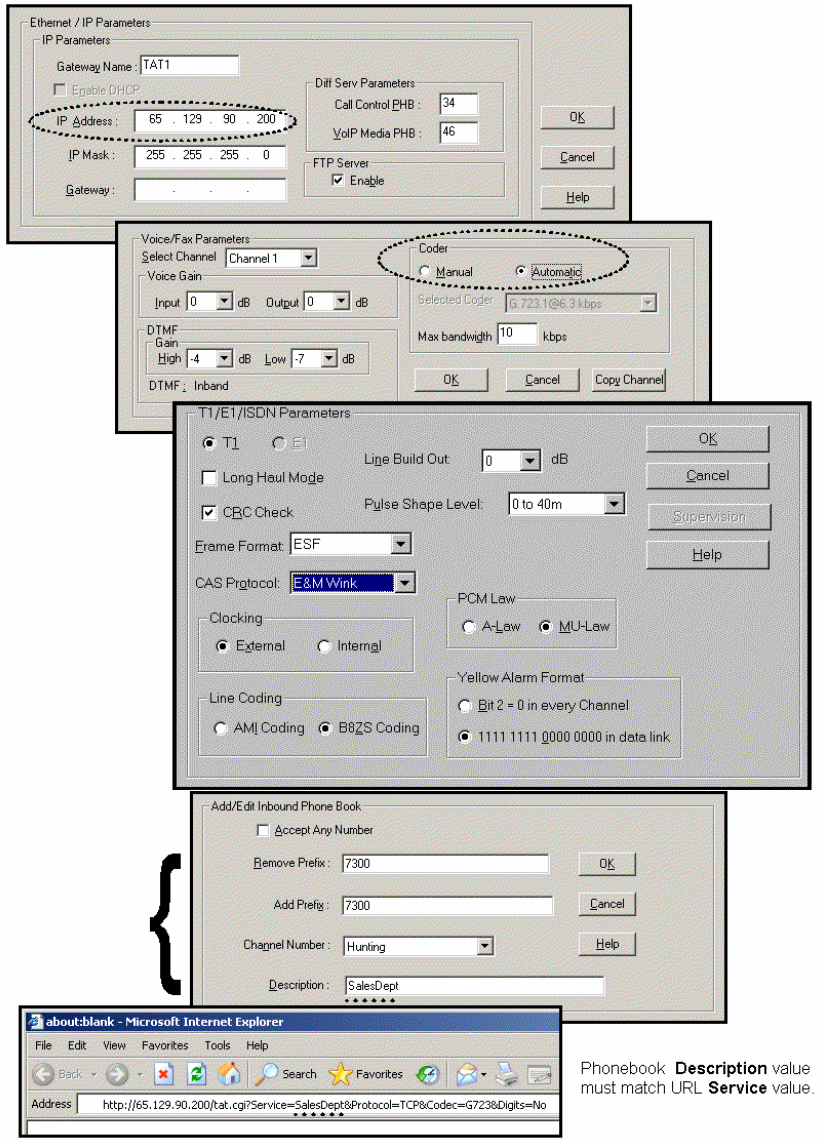
Calls into a Phone Pool

User-A Calls Sales Department. The drawing below shows a call coming into the Whirlygig Sales Department from a prospective customer. The PBX is set up to 'hunt' among a group of extensions allotted to the Sales Department. The TalkAnytime unit directs calls originating through the Whirlygig web server to the PBX and into the phone pool of sales representatives.

The main settings of the TalkAnytime Configuration Program, Phonebook, and web server URL that are required to implement this capacity are shown in the second drawing below. Note that, especially for the T1/E1/ISDN parameters, your settings must simply conform to the requirements of your PBX; there is no set of routine default values that can be depended upon to be widely applicable.



Technical Configuration for Phone Pool Call

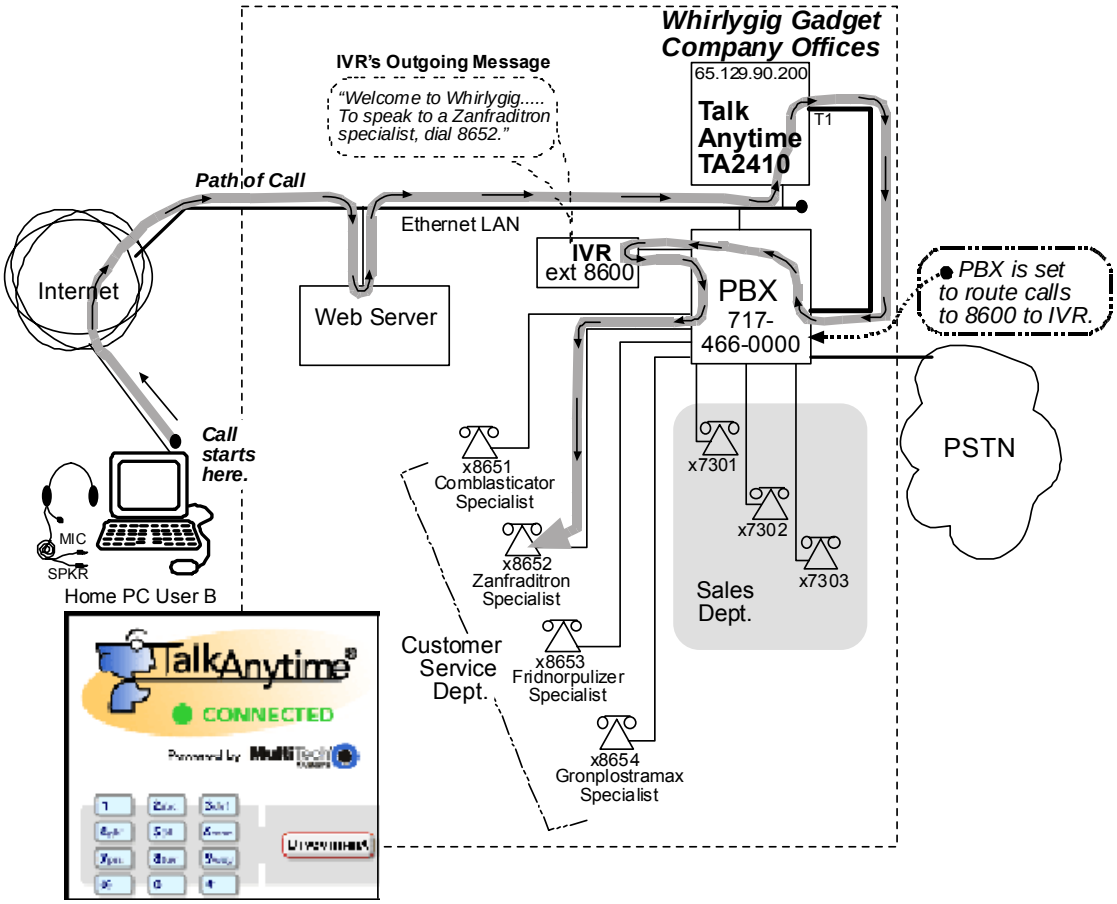


Phonebook **Description** value must match URL **Service** value.

Calls to Specific Extensions Through an IVR

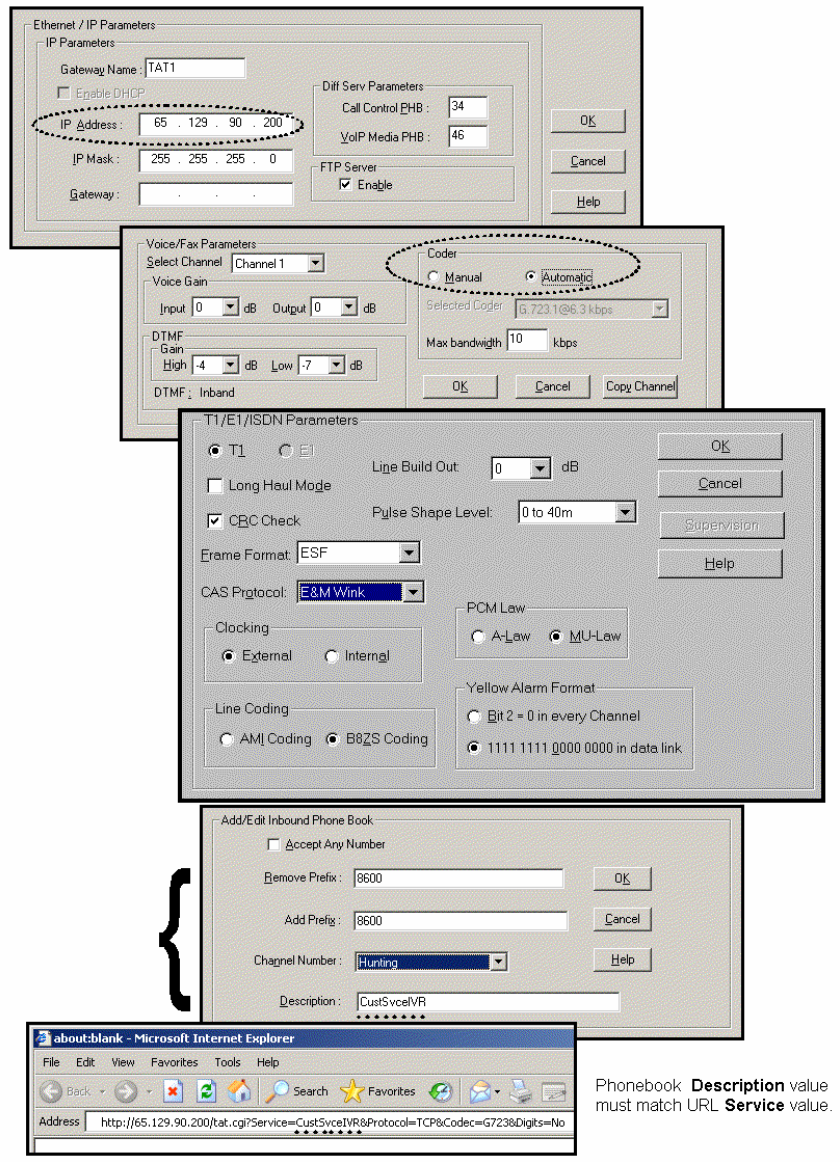
User-B Calls Customer Service Specialist. The drawing below shows a call coming into a particular product specialist in the Whirlygig Customer Service Department from customer concerned about a "Zanfraditron" device (a fictional product contrived for this example). The PBX is equipped with an IVR (which produces outgoing messages and allows DTMF in return from the caller) at extension 8600. In response to the outgoing message, the caller dials the desired extension for the Zanfraditron specialist on the TalkAnytime keypad and the connection is made.

The main settings of the TalkAnytime Configuration Program, Phonebook, and web server URL that are required to allow this kind of incoming call are shown in the second drawing below. Note that, especially for the T1/E1/ISDN parameters, your settings must simply conform to the requirements of your PBX; there is no set of routine default values that can be depended upon to be widely applicable.



After hearing IVR's outgoing message, caller uses TalkAnytime keypad to dial the desired extension.

Technical Configuration for Specific Extension Calls via IVR

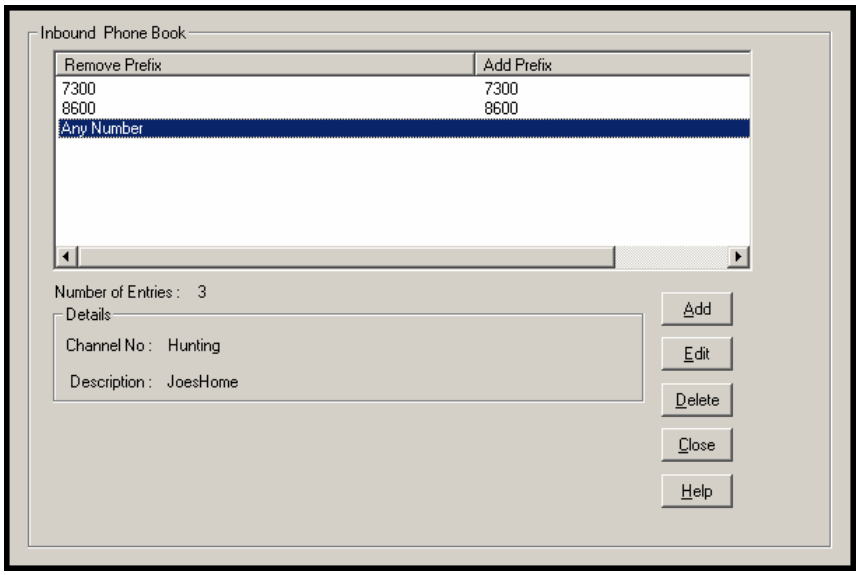


Alternative Method to Access Multiple Extensions. In this example, we used an IVR to allow access to various extensions of the PBX. Specifically, the end-user used the TalkAnytime keypad to dial digits in response to instructions given in the IVR's outgoing message.

Be aware that external extensions could have been reached in another way without an IVR: the end-user could be allowed to dial any extension on the PBX from the TalkAnytime keypad (determined by the setting *Digits=Yes* in the URL). In that case, the PBX would have to be configured in a way that blocks PSTN calling by the PBX extensions to which the TalkAnytime channels are connected. In either method, it is important to prevent unwanted access to the PSTN and especially toll calling through the PBX.

Inbound Phonebook List for Entire Example System

The three uses of the TalkAnytime described here can be implemented simultaneously in a single system. Each type of use entails its own entry in the Phonebook. The resulting phonebook list is shown below.



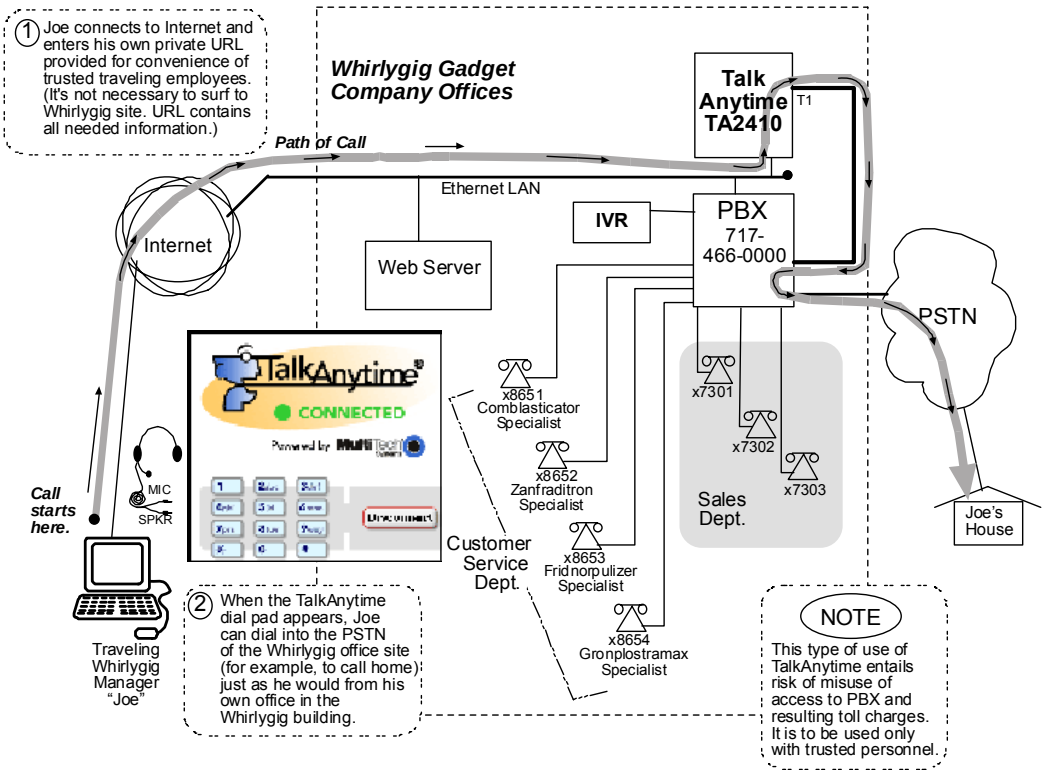
Calls by Trusted Party into PBX and Beyond

Employee Accesses PSTN of Home City Thru PBX. The drawing below shows a trusted party using TalkAnytime to access the PSTN of the company's home office and, from there, to make a call to his home residence. In this case, the caller does not need to surf to the company's home page to begin. Once an Internet connection is established, the user can simply type the private (and secret) URL that he has been given into the browser, press ENTER, and be connected to the TalkAnytime unit. When the TalkAnytime dialing pad appears, the user can dial just as if he/she were at his desk at the company's home office.

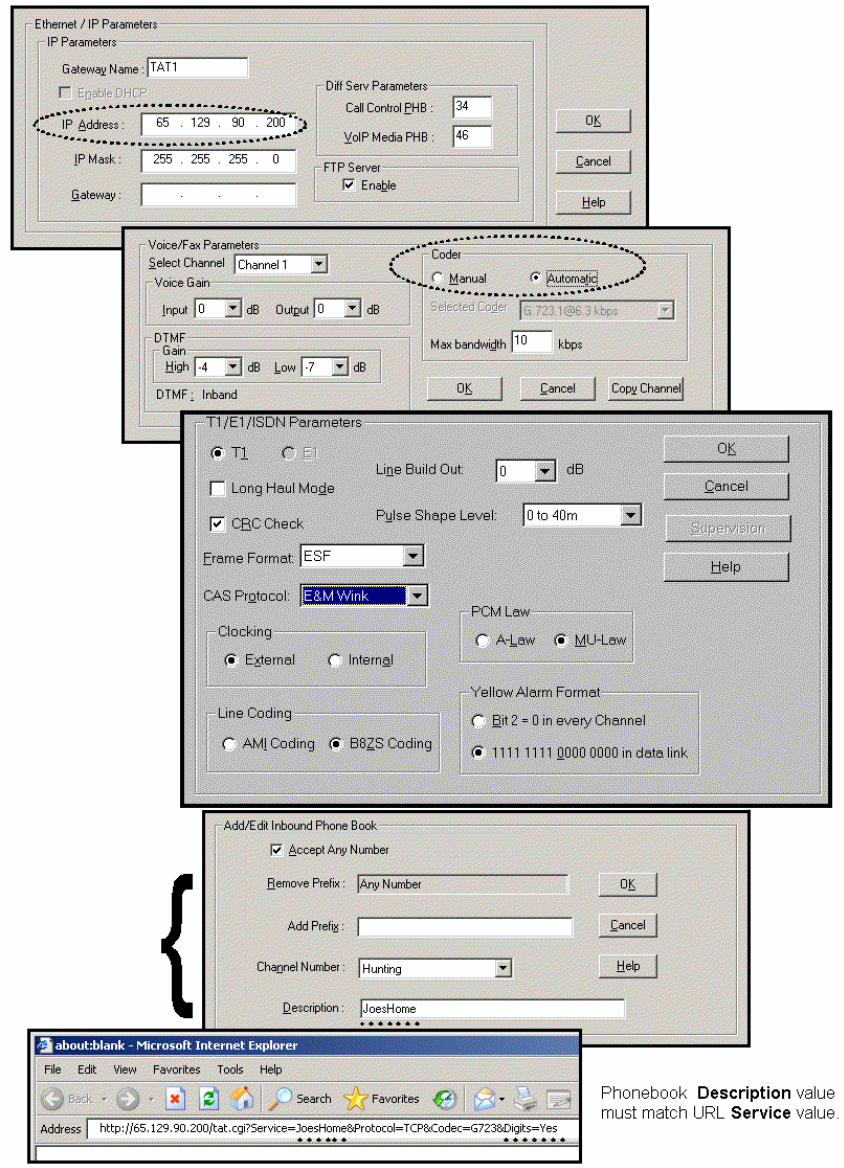
> **NOTE**: Since this arrangement gives access to the company's PBX and consequent financial liability for toll charges incurred, such authorization should only be given to trusted parties.

The main settings of the TalkAnytime Configuration Program, Phonebook, and web server URL that are required to allow this kind of incoming call are shown in the second drawing below. Note that, especially for the T1/E1/ISDN parameters, your settings must simply conform to the requirements of your PBX; there is no set of routine default values that can be depended upon to be widely applicable.

Trusted Party Calling Through PBX


1 Joe connects to Internet and enters his own private URL provided for convenience of trusted traveling employees. (It's not necessary to surf to Whirlygig site. URL contains all needed information.)
Whirlygig Gadget Company Offices
Talk Anytime TA2410
T1
Path of Call
Ethernet LAN
IVR
PBX 717-466-0000
Internet
Web Server
PSTN
TalkAnytime
CONNECTED
x8651 Comblasticator Specialist
x8652 Zanfraditron Specialist
x8653 Fridnorpulizer Specialist
x8654 Gronplostramax Specialist
x7301
x7302
x7303
Sales Dept.
Customer Service Dept.
Joe's House
Call starts here.
MIC
SPKR
Traveling Whirlygig Manager "Joe"
2 When the TalkAnytime dial pad appears, Joe can dial into the PSTN of the Whirlygig office site (for example, to call home) just as he would from his own office in the Whirlygig building.
NOTE
This type of use of TalkAnytime entails risk of misuse of access to PBX and resulting toll charges. It is to be used only with trusted personnel.

Technical Configuration for Trusted-Party Calling Through PBX



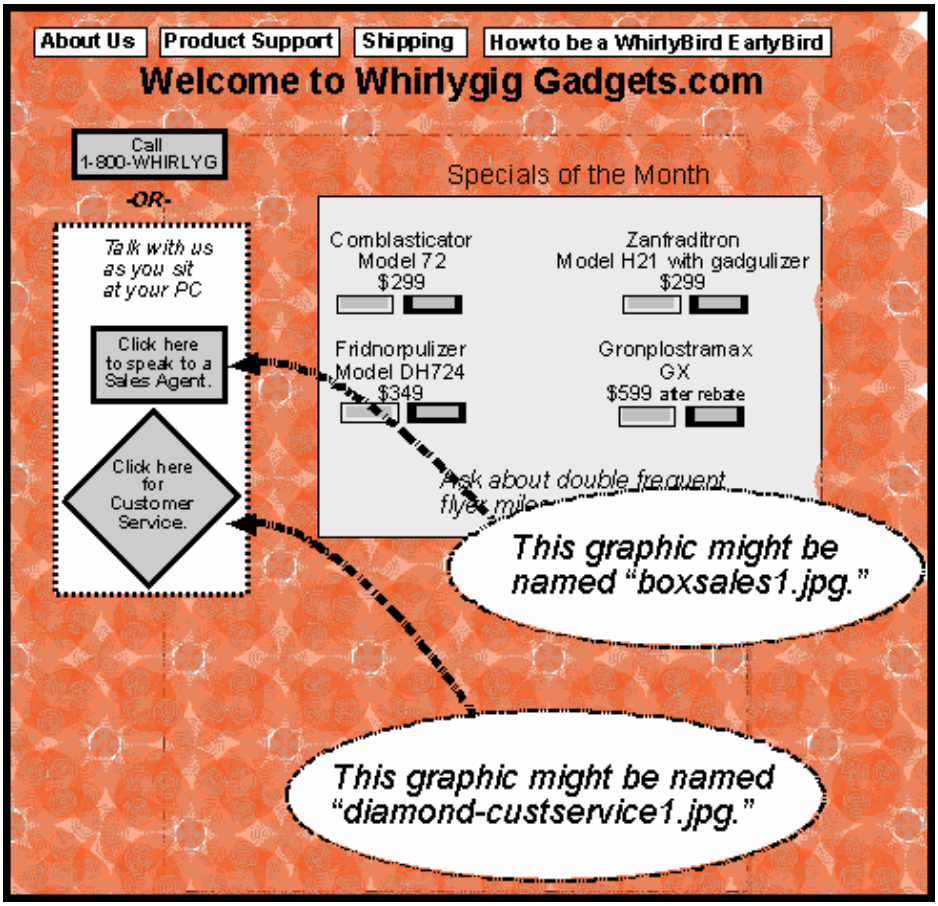
How Web Site Must Be Configured

The webmaster must make several preparations for the TalkAnytime. The webmaster must:

- determine the IP address to be used for the TalkAnytime unit,
- have a graphic file that will be used as a target for the 'mouse-over' command that launches TalkAnytime for the user,
- produce a qualifications query window that informs user of user-PC requirements before downloading the TalkAnytime applet program, and
- establish a command line that includes the IP address of the TalkAnytime unit as well as several variable settings.

IP Address for TalkAnytime. Any location on the host site is OK.

Graphic File for Mouse-Over Targeting. Any file will suffice. Typically the graphic image would include identify the department or product name associated with the call. For example, a web site might use separate graphic files to direct calls concerning various product lines or specially reduced-price products or promotions.


About Us
Product Support
Shipping
Howto be a WhirlyBird EarlyBird
Welcome to Whirlygig Gadgets.com
Call 1-800-WHIRLYG
-OR-
Talk with us as you sit at your PC
Click here to speak to a Sales Agent.
Click here for Customer Service.
Specials of the Month
Comblasticator Model 72 $299
Zanfraditron Model H21 with gadgulizer $299
Fridnorpulizer Model DH724 $349
Gronplostramax GX $599 after rebate
Ask about double frequent flyer mile
This graphic might be named "boxsales1.jpg."
This graphic might be named "diamond-custservice1.jpg."

These are HTML expressions needed to insert the graphics onto the web site.

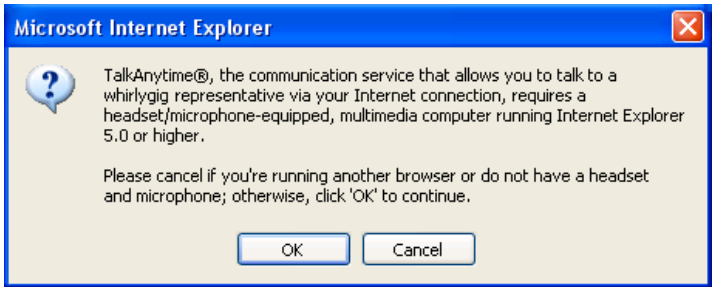
```
<a href="" onMouseUp="confirmTalkAnytime()"><img
src="/images/Logos/Tradenames/boxsales1.jpg" ALT="TalkAnytime®" width="169" height="75"
border="0" /></a>
```

```
<a href="" onMouseUp="confirmTalkAnytime()"><img
src="/images/Logos/Tradenames/diamond-custservice1.jpg" ALT="TalkAnytime®" width="169"
height="75" border="0" /></a>
```

Qualifications Query Window. When an online computer user clicks on the TalkAnytime icon, a message appears that indicates that the computer being used must meet certain requirements in order to use TalkAnytime.

User PC Requirements for TalkAnytime	
Category	**Requirement**
Operating System	Windows 98 or Windows XP
Browser	Internet Explorer 5.0 or higher
Audio Hardware	Microphone & Speaker (in any form)
O.S. Settings	Headset or microphone/speaker combo must be activated and not pre-empted by any other audio hardware or software.
Browser Settings	Popup Blocking must be disabled, at least for the IP address at which the TalkAnytime unit is operating. ActiveX controls must be enabled.

The following window will appear to the user.


Microsoft Internet Explorer
TalkAnytime®, the communication service that allows you to talk to a whirlygig representative via your Internet connection, requires a headset/microphone-equipped, multimedia computer running Internet Explorer 5.0 or higher.
Please cancel if you're running another browser or do not have a headset and microphone; otherwise, click 'OK' to continue.
OK
Cancel

The following is a JavaScript command that would create such a graphical qualifications query window.

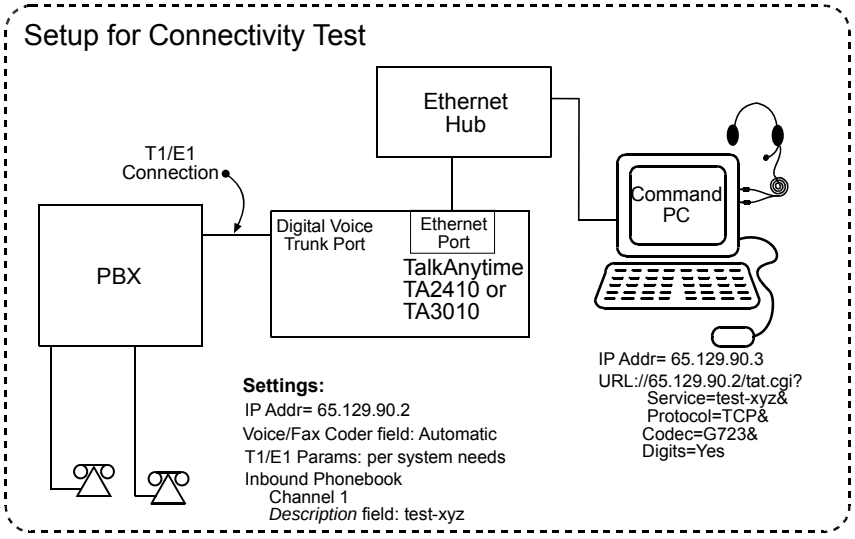
```
function confirmTalkAnytime() {
  if(confirm("TalkAnytime®, the communication service that allows you to
      talk to your \n" +
      "whirlygig representative via your Internet connection,
      requires a \n" +
      "headset/microphone-equipped, multimedia computer running Internet
      Explorer \n" +  "5.0 or higher. \n" +  " \n" +  "Please cancel if
      you're running another browser or do not have a headset \n" +
      "and microphone; otherwise, click 'OK' to continue.") == true){
  var DaName = "TalkAnytime® Communication Window";
window.open("http://65.129.90.200/tatfrm.cgi?Service=Sales&Codec=G723&Pr
      otocol=TCP&Packetization=30&Digits=No",null,"height=285,width=310,
      bar=no,resizable=no,status=no,toolbar=no,menubar=no,location=no,sc
      rollbars=no",true);
      }
      }
```

The administrator and webmaster can customize the query window message as needed.

Connectivity Test

The procedures "Phone/IP Starter Configuration" and "Phonebook Starter Configuration" must be completed before you can do this procedure.

1. The setup for testing connectivity is shown below. The settings in the **T1/E1 Parameters** screen must be made to fit your PBX and overall system.



After the settings shown here have been made in the TalkAnytime Configuration program, click on **Save Setup**.

2. From a browser at the command PC, type in the test URL with "Digits=Yes." At the TalkAnytime client software, click **Dial**. You will then hear a dial tone coming back from the PBX. Enter the designated PBX extension on the TalkAnytime dial pad (on the screen). The phone at the designated PBX extension should ring.

   If a connection is made and the designated phone extension of the PBX rings, then connectivity has been demonstrated.

   If a connection cannot be made, skip to **Troubleshooting** below. Troubleshooting involves a ping test. If you can ping the TA-2410/3010 successfully but cannot make a call, then there may be a problem with your **T1/E1 Parameters** settings. Check those settings and re-test.

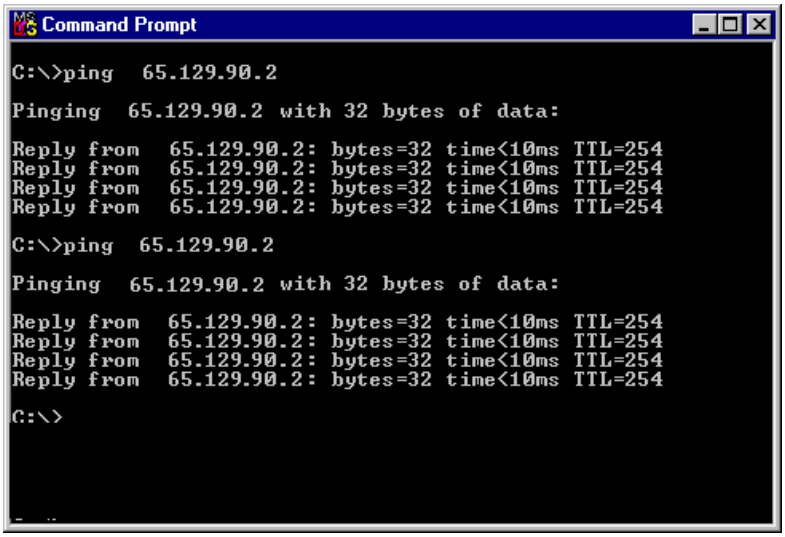
   If a connection cannot be made, skip to **Troubleshooting** below.

3. The LEDs on the front panel of the TalkAnytime unit will also help you confirm connectivity. If the TA-2410/3010 is configured correctly and connected properly, the **ONL** LED should be on, and the **LC** and **LS** LEDs should be off.

Troubleshooting

If you cannot establish voice connectivity between the Command PC and the TalkAnytime, follow the steps below to determine the problem.

1. Ping the TalkAnytime unit to confirm connectivity to the network.


Command Prompt
C:\>ping 65.129.90.2
Pinging 65.129.90.2 with 32 bytes of data:
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
C:\>ping 65.129.90.2
Pinging 65.129.90.2 with 32 bytes of data:
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
Reply from 65.129.90.2: bytes=32 time<10ms TTL=254
C:\>

2. Verify the connections at the TalkAnytime unit, hub, and PC.
   - Check cabling. Are connections well seated? To correct receptacle?
   - Are the **LNK** LEDs on on both the TalkAnytime unit and the PC's network card lit?
3. Verify Inbound Phonebook configuration.
4. Verify settings in T1/E1 Parameter screen.
5. Verify settings in Ethernet/IP Parameters screen (are the IP addresses of the PC and TalkAnytime unit correct?).
6. If, after thorough inspection, connectivity cannot be established, call MultiTech Customer Service at 1-800-972-2439.

Chapter 3: Mechanical Installation and Cabling

Introduction

The TA2410 and TA3010 units are heavy enough to require two able-bodied persons to participate when installing one of these units in a rack.

Please read the safety notices before beginning installation.

Safety Warnings

Lithium Battery Caution

A lithium battery on the voice/fax channel board provides backup power for the timekeeping capability. The battery has an estimated life expectancy of ten years.

When the battery starts to weaken, the date and time may be incorrect. If the battery fails, the board must be sent back to Multi-Tech Systems for battery replacement.

Warning: There is danger of explosion if the battery is incorrectly replaced.

Safety Warnings Telecom

1. Never install telephone wiring during a lightning storm.
2. This product must be disconnected from power source and telephone network interface when servicing.
3. This product is to be used with UL and cUL listed computers.
4. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
5. Use caution when installing or modifying telephone lines.
6. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
7. Do not use a telephone in the vicinity of a gas leak – not even to report a gas leak.
8. To reduce the risk of fire, use only a UL-listed 26 AWG or larger telecommunication line cord.
9. Never install a telephone jack in a wet location unless the jack is specifically designed for wet locations.

Unpacking Your TalkAnytime Unit

When unpacking your TalkAnytime unit, check to see that all of the items shown are included in the box. If any box contents are missing, contact MultiTech Tech Support at 1-800-972-2439.

Unpacking the TA-2410/3010 TalkAnytime Unit

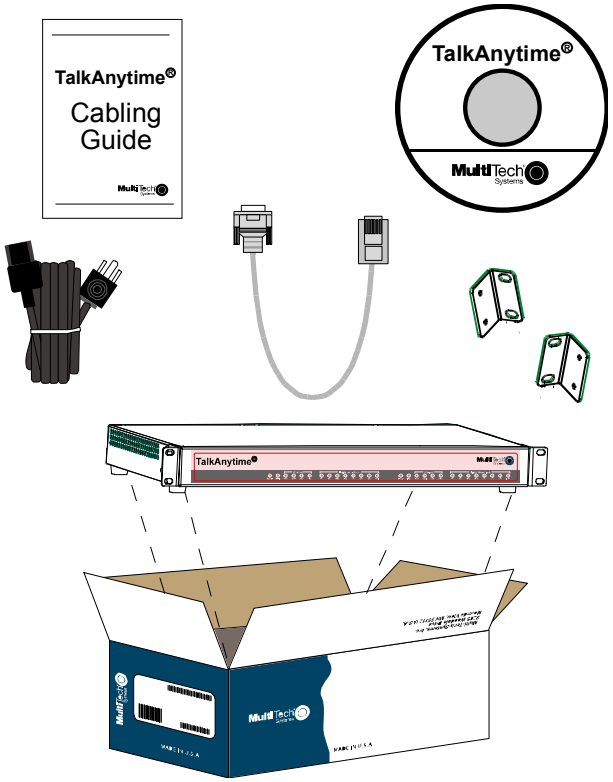


Figure 3-1: Unpacking the TA-2410/3010

Rack Mounting Instructions for TA2410 & TA3010

The TalkAnytime units can be mounted in an industry-standard EIA 19-inch rack enclosure, as shown in Figure 3-2.

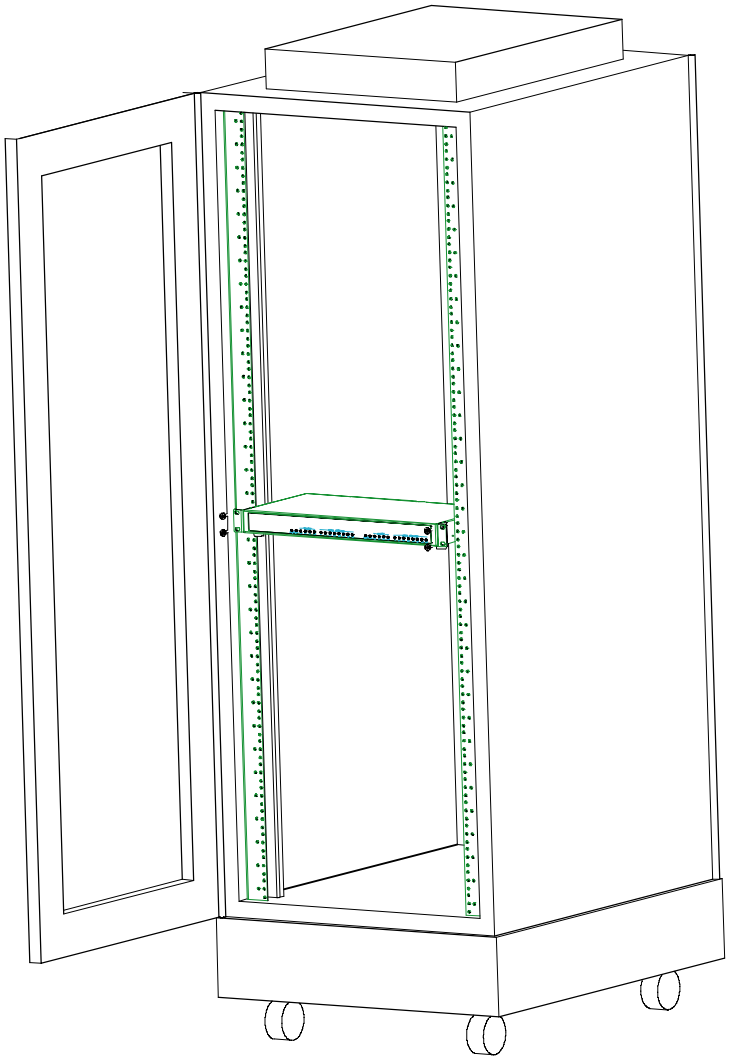


Figure 3-2: Rack-Mounting (TA2410 or TA3010)

Safety Recommendations for Rack Installations

Ensure proper installation of the unit in a closed or multi-unit enclosure by following the recommended installation as defined by the enclosure manufacturer. Do not place the unit directly on top of other equipment or place other equipment directly on top of the unit. If installing the unit in a closed or multi-unit enclosure, ensure adequate airflow within the rack so that the maximum recommended ambient temperature is not exceeded. Ensure that the unit is properly connected to earth ground by verifying that it is reliably grounded when mounted within a rack. If a power strip is used, ensure that the power strip provides adequate grounding of the attached apparatus.

When mounting the equipment in the rack, make sure mechanical loading is even to avoid a hazardous condition, such as loading heavy equipment in rack unevenly. The rack used should safely support the combined weight of all the equipment it supports.

Ensure that the mains supply circuit is capable of handling the load of the equipment. See the power label on the equipment for load requirements (full specifications for TalkAnytime models are presented in chapter 1 of this manual).

Maximum ambient temperature for the unit is 60 degrees Celsius (140 degrees Fahrenheit) at 20-90% non-condensing relative humidity. This equipment should only be installed by properly qualified service personnel. Only connect like circuits. In other words, connect SELV (Secondary Extra Low Voltage) circuits to SELV circuits and TN (Telecommunications Network) circuits to TN circuits.

19-Inch Rack Enclosure Mounting Procedure

Attaching the TalkAnytime unit to a rack-rail of an EIA 19-inch rack enclosure will certainly require two persons. Essentially, the technicians must attach the brackets to the TalkAnyTime chassis with the screws provided, as shown in Figure 3-3, and then secure unit to rack rails by the brackets, as shown in Figure 3-4. Because equipment racks vary, screws for rack-rail mounting are not provided. Follow the instructions of the rack manufacturer and use screws that fit.

1. Position the right rack-mounting bracket on the TalkAnytime unit using the two vertical mounting screw holes.
2. Secure the bracket to the TalkAnytime unit using the two screws provided.
3. Position the left rack-mounting bracket on the TalkAnytime unit using the two vertical mounting screw holes.
4. Secure the bracket to the TalkAnytime unit using the two screws provided.
5. Remove feet (4) from the TalkAnytime unit.
6. Mount the TalkAnytime unit in the rack enclosure per the rack manufacture's mounting procedure.

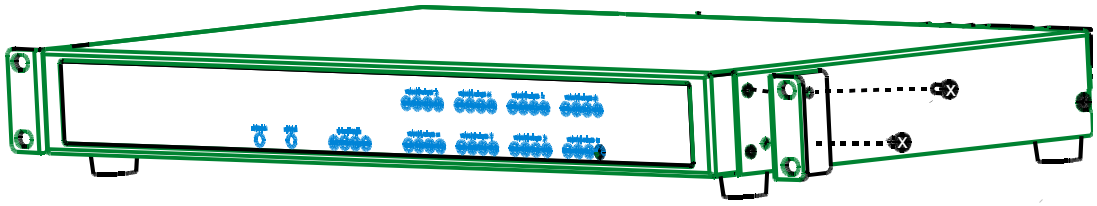


Figure 3-3: Bracket Attachment for Rack Mounting (TA2410 & TA3010)

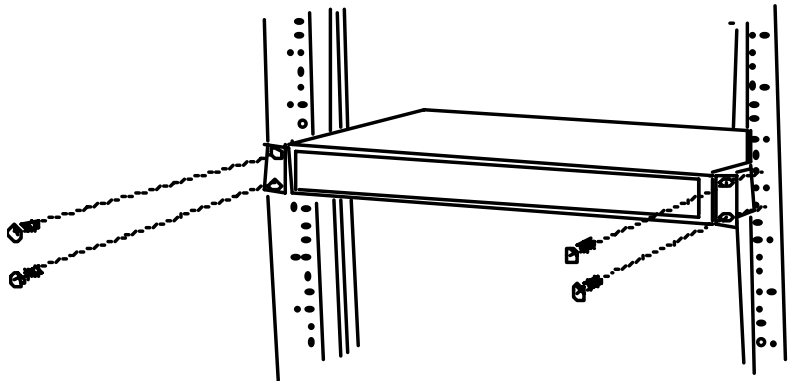


Figure 3-4: Attaching TalkAnytime Unit to Rack Rail (TA2410 & TA3010)

Cabling Procedure for TA-2410/3010

Cabling involves connecting the TalkAnytime unit to your telephone equipment, command computer, your network (WAN or LAN), to power, and to earth ground.

1. Connect the power cord supplied with your TalkAnytime unit to a live AC outlet and to the power connector on the back of the TalkAnytime unit as shown at top right in Figure 3-5.

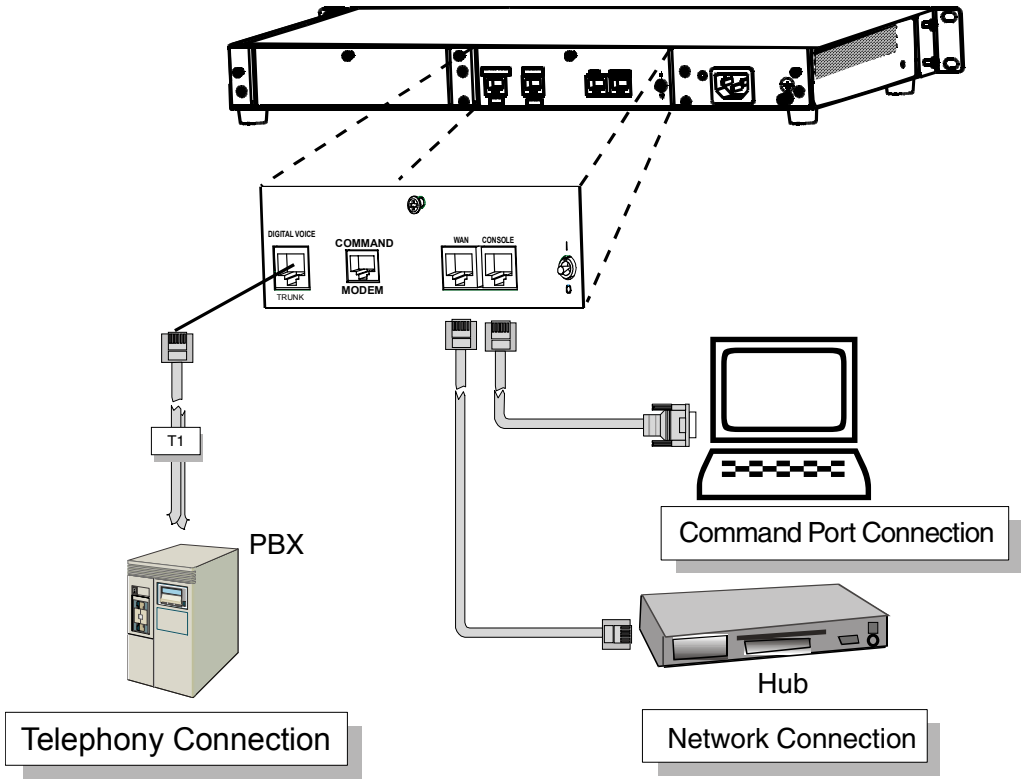


Figure 3-5: Cabling for TA-2410/3010

2. Connect the TalkAnytime to the PC (the computer that will hold the TalkAnytime software) using the RJ45-to-DB9 (female) cable provided with your TalkAnytime unit. Plug the RJ-45 end of the cable into the **Console** port of the TalkAnytime unit and connect the other end (the DB9 connector) to the PC serial port you are using (typically COM1 or COM2). See Figure 3-5. If your computer has only USB2.0 ports and no serial ports, you will need a serial-to-USB2.0 adapter.
3. Connect a network cable to the **WAN** connector on the back of the TalkAnyTime unit. Connect the other end of the cable to your network.
4. If you intend to configure the TalkAnytime remotely using the TalkAnytime Windows GUI, connect an RJ-11 phone cable between the Command Modem connector (at the rear of the TalkAnytime) and a receptacle served by a telco POTS line. See Figure 3-6.

   The Command Modem is built into the TalkAnytime unit. To configure the TalkAnytime remotely using its Windows GUI, you must call into the TalkAnytime's Command Modem. Once a connection is made, the configuration process is identical to local configuration with the Windows GUI.

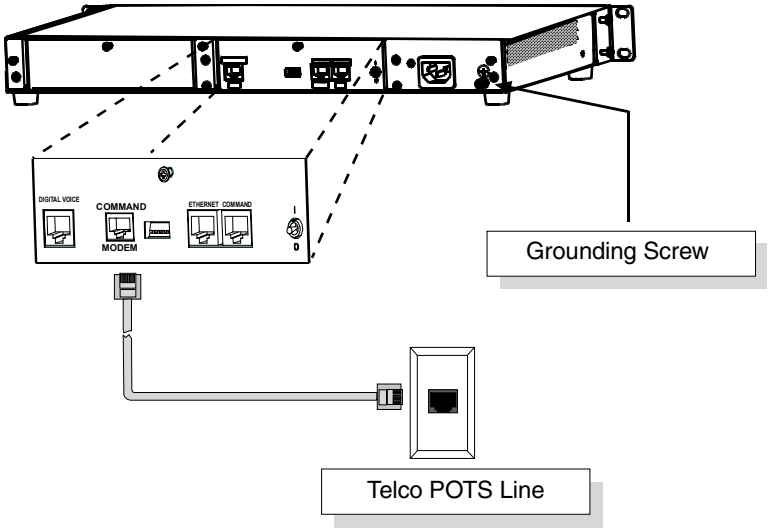


Figure 3-6. TA-2410/3010 TalkAnytime Connections for Remote Config Modem & GND

5. Ensure that the TalkAnytime unit is properly connected to earth ground.

   This can be accomplished by connecting a grounding wire between the chassis grounding screw (see Figure 3-7) and a connector securely connected to the ground (GND) of the building's electrical system.

   Ground Connection Details. Ensure that the unit is securely and permanently connected to an earth ground (GND) with a ground wire of 18 gauge (18 AWG) or thicker. The ground wire needs to be installed between the grounding screw on the TalkAnytime chassis and a permanent earth ground. Whether the TalkAnytime unit is used in a rack or on a desktop, you must verify that the earth ground connection is permanent and reliable. In order for the ground connection to be considered permanent, the grounding wire must connect to the earth ground of the building's electrical wiring system and the ground connection must use a screw terminal or other reliable means of fastening. The ground connection must not be as easily disconnected as, for example, a power cord.

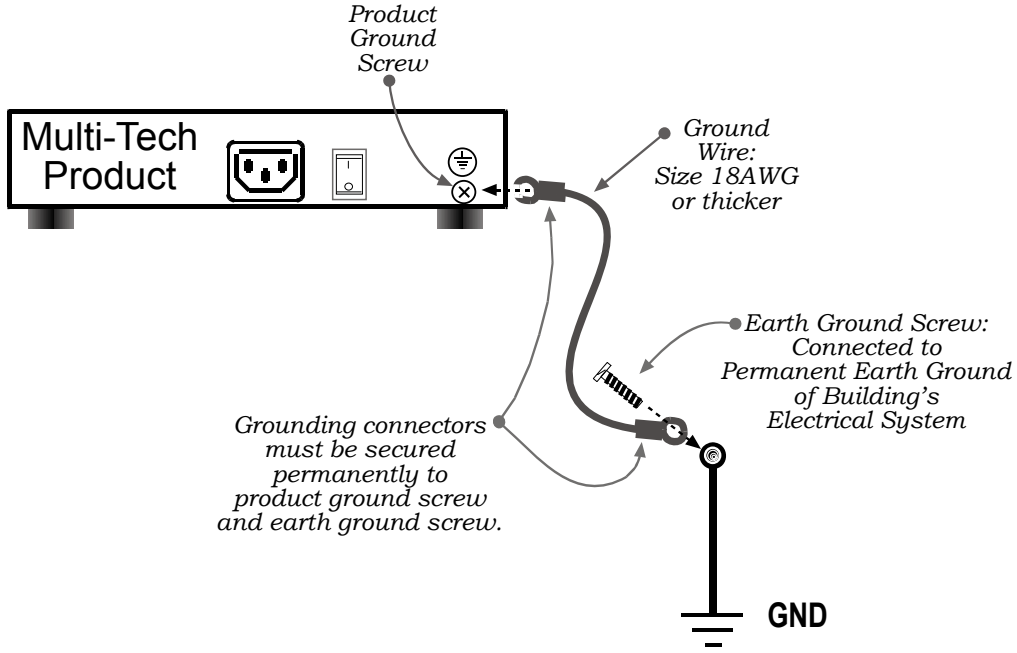

Product Ground Screw
Multi-Tech Product
Ground Wire: Size 18AWG or thicker
Earth Ground Screw: Connected to Permanent Earth Ground of Building's Electrical System
Grounding connectors must be secured permanently to product ground screw and earth ground screw.
GND

Figure 3-7. Earth Ground Details

6. Turn on power to the TalkAnytime unit by placing the ON/OFF switch on the back panel to the ON position. Wait for the **Boot** LED on the TalkAnytime unit to go off before proceeding. This may take a few minutes.

   Proceed to Chapter 4 to load the TalkAnytime software.

Chapter 4: Software Installation

Introduction

Configuring software for your TalkAnytime unit entails four tasks:
(1) loading the software onto the command PC (this is "Software Installation and is discussed in this chapter),
(2) setting values for telephony and IP parameters that will fit your system (this is "Technical Configuration" and it is discussed in Chapter 5),
(3) establishing a "phonebook" that contains routing instructions and corresponding dialing patterns for TalkAnytime calls (this is "Phonebook Configuration" and it is discussed in Chapter 6, and
(4) establishing a TalkAnytime URL that includes the IP address at which the TalkAnytime will operate, as well as several operating parameters and setting up a link to this URL on the organization's website (this is "URL Configuration" and it is discussed in Chapter 6).

Loading MultiVOIP Software onto the PC

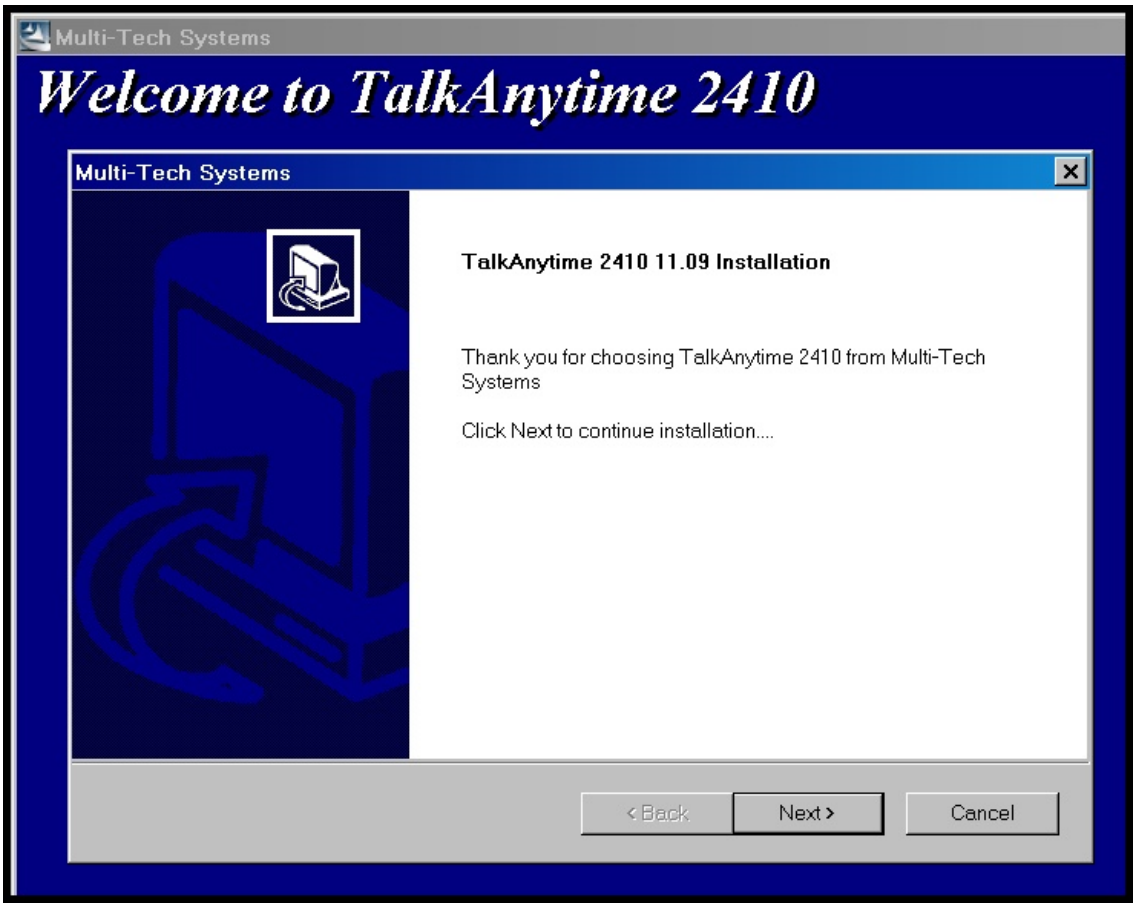
The software loading procedure does not present every screen or option in the loading process. It is assumed that someone with a thorough knowledge of Windows and the software loading process is performing the installation.

The TalkAnytime software and User Guide are contained on the TalkAnytime product CD. Because the CD is auto-detectable, it will start up automatically when you insert it into your CD-ROM drive. When you have finished loading your TalkAnytime software, you can view and print the User Guide by clicking on the **View Manuals** icon.

1. Be sure that your TalkAnytime unit has been properly cabled and that the power is turned on.
2. Insert the TalkAnytime CD into your CD-ROM drive. The CD should start automatically. It may take 10 to 20 seconds for the Multi-Tech CD installation window to display.

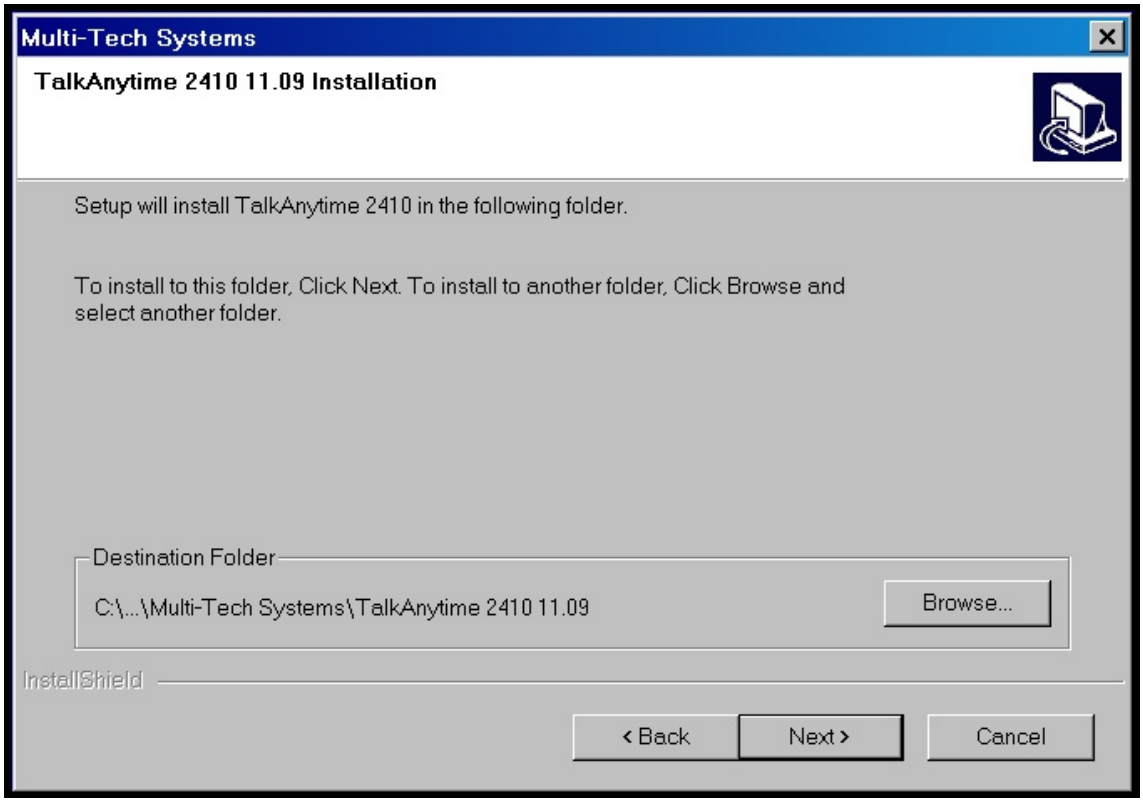
If the Multi-Tech Installation CD window does not display automatically, click **My Computer**, then right click the **CD ROM drive** icon, click **Open**, and then click the **Autorun** icon.

3. When the Multi-Tech Installation CD dialog box appears, click the **Install Software** icon.
4. A 'welcome' screen appears.



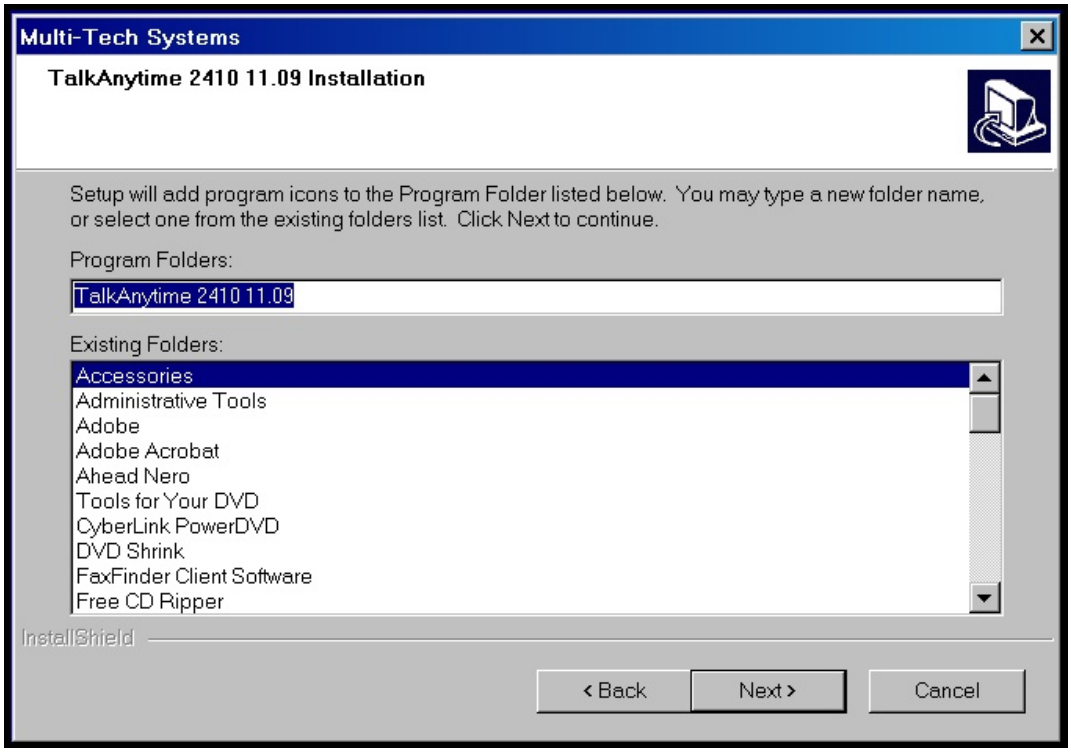
Press **Enter** or click **Next** to continue.

5. Follow the on-screen instructions to install your TalkAnytime software. The first screen asks you to choose the folder location of the files of the TalkAnytime software.


Multi-Tech Systems
TalkAnytime 2410 11.09 Installation
Setup will install TalkAnytime 2410 in the following folder.
To install to this folder, Click Next. To install to another folder, Click Browse and select another folder.
Destination Folder
C:\...\Multi-Tech Systems\TalkAnytime 2410 11.09
Browse...
InstallShield
< Back
Next >
Cancel

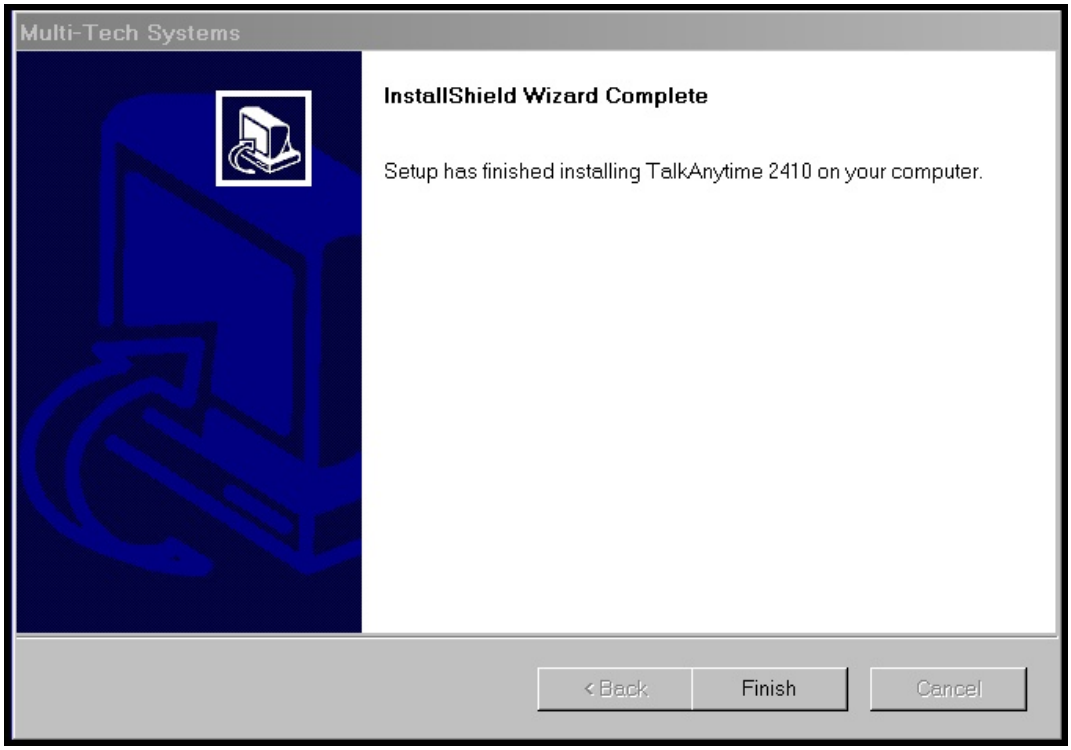
Choose a location and click **Next.**

6. At the next screen, you must select a program folder location for the TalkAnytime software program icon.



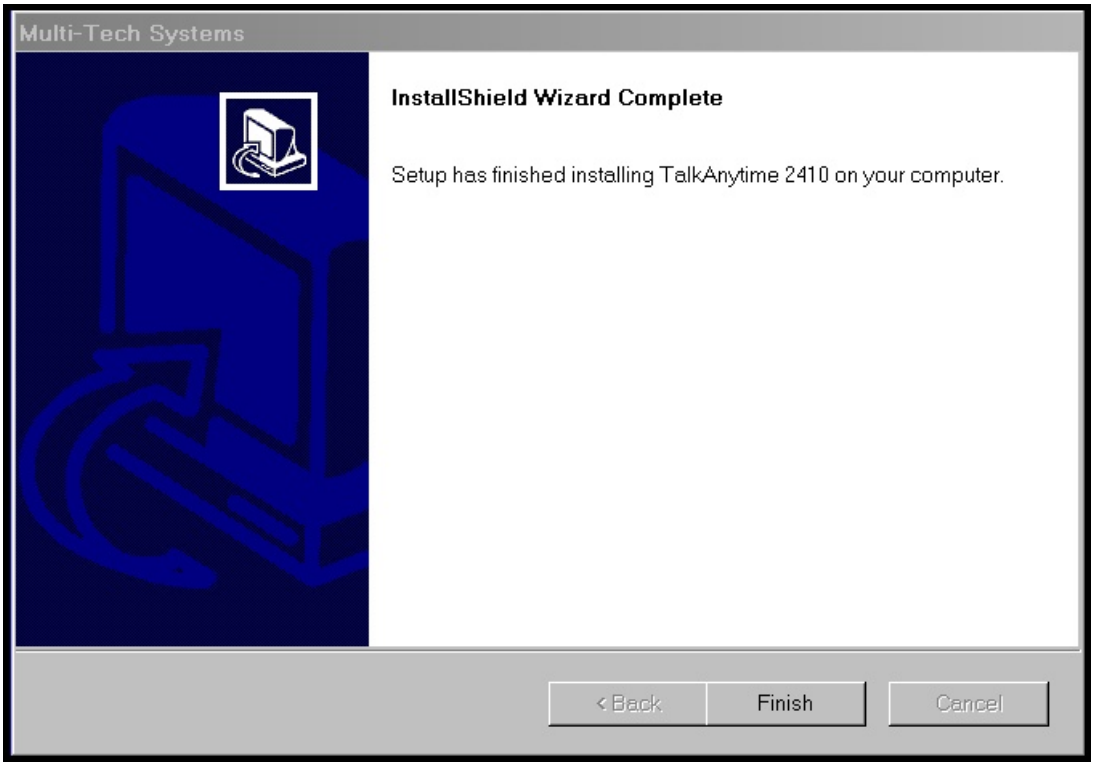
Click **Next**. Transient progress screens will appear while files are being copied.

7. A completion screen will appear.



Click **Finish**.

8. When setup of the TalkAnytime software is complete, you will be prompted to run the TalkAnytime software to configure the TalkAnytime unit.

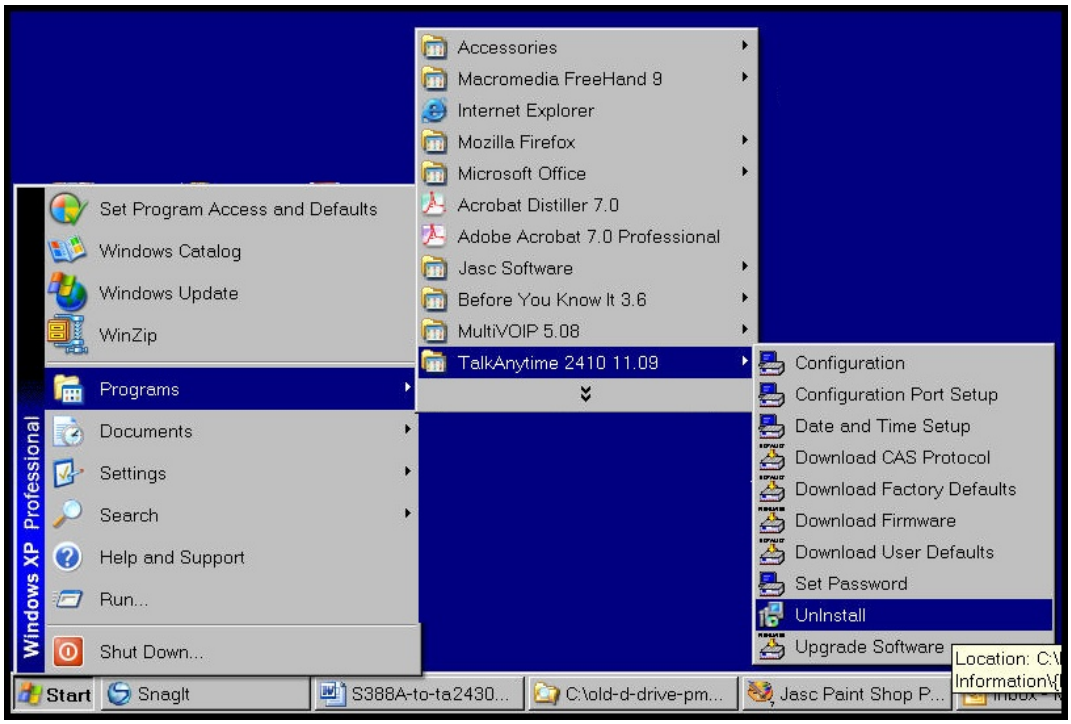


Software installation is complete at this point. You may proceed with Technical Configuration now or not, at your convenience.

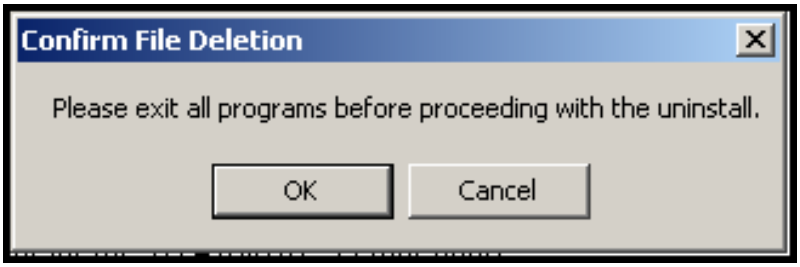
Technical Configuration instructions are in the next chapter of this manual.

Un-Installing the TalkAnytime Configuration Software

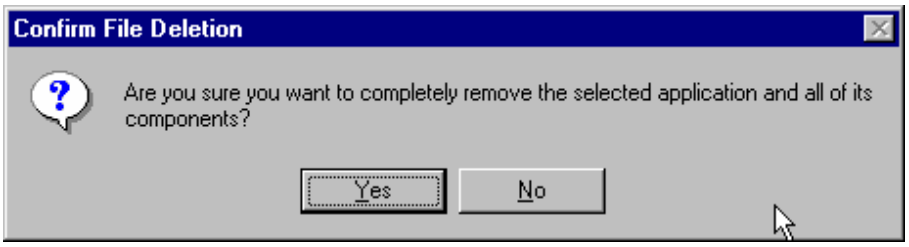
1. To un-install the TalkAnytime configuration software, go to **Start** | **Programs** and locate the entry for the TalkAnytime program. Select **Uninstall**.

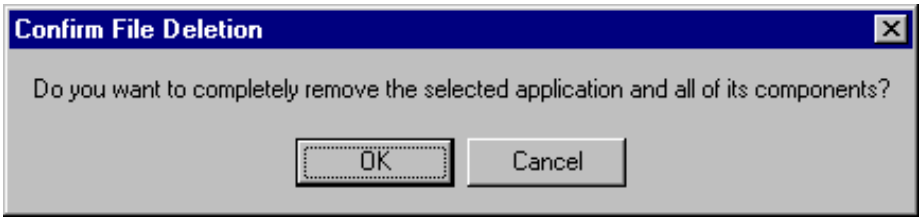


2. You will be asked to shut down other applications while uninstalling the TalkAnytime software.

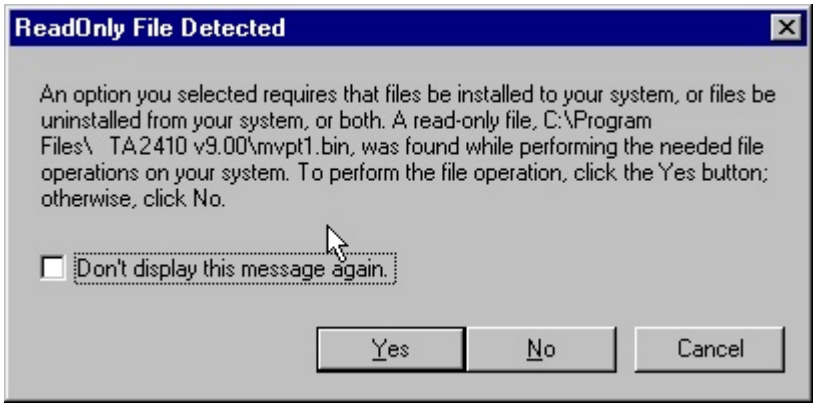


3. Two confirmation screens will appear. Click **Yes** and **OK** when you are certain you want to continue with the uninstallation process.

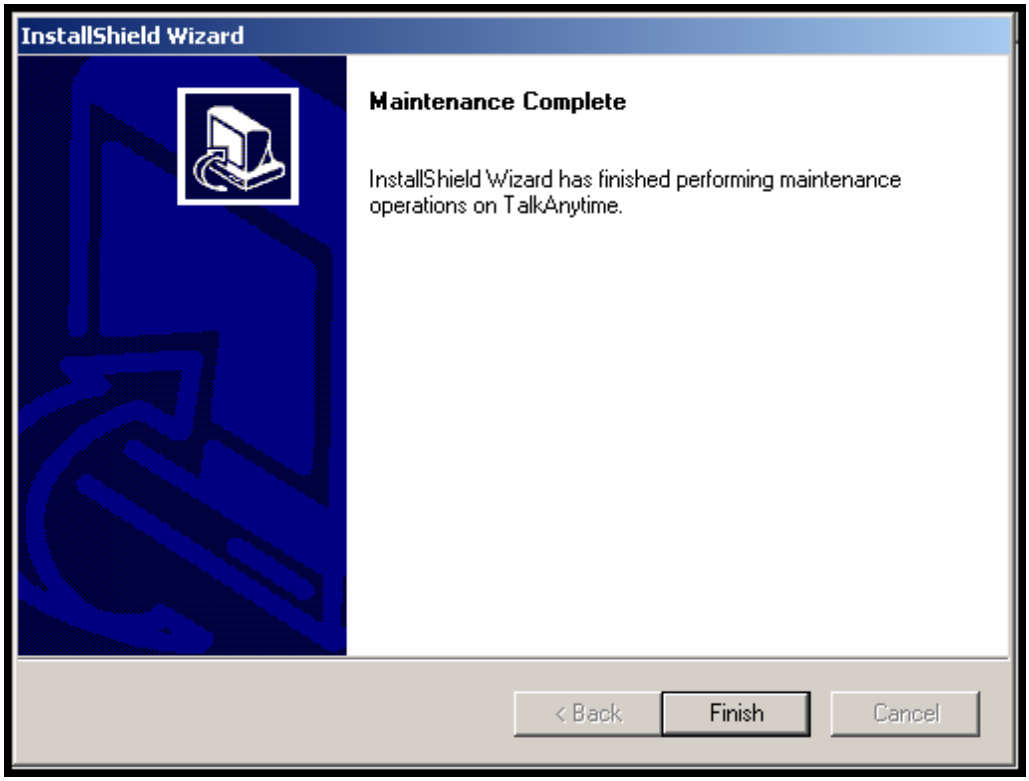

Confirm File Deletion
Are you sure you want to completely remove the selected application and all of its components?
Yes
No



4. A special warning message similar to that shown below will appear concerning the TalkAnytime software's ".bin" file. Click **Yes**.


ReadOnly File Detected
An option you selected requires that files be installed to your system, or files be uninstalled from your system, or both. A read-only file, C:\Program Files\ TA2410 v9.00\mvpt1.bin, was found while performing the needed file operations on your system. To perform the file operation, click the Yes button; otherwise, click No.
Don't display this message again.
Yes
No
Cancel

5. A completion screen will appear.



Click **Finish**.

Chapter 5: Technical Configuration

Configuring the TalkAnytime

When you begin using the TalkAnytime unit, you must

(A) decide which graphic user interface (GUI) to use (there is a Windows GUI and a web-based GUI, and both can be accessed remotely),

(B) set values for two broad groups of configuration parameters on the TalkAnytime unit (technical configuration parameters and phone book configuration parameters, both described below), and

(C) complete the setup of the TalkAnytime unit for its inter-operation with a web server.

Two GUIs, both with Remote Access. The TalkAnytime unit has two GUIs.

One GUI is a Windows GUI, which can be accessed locally (by a connection between the "Console" port of the TalkAnytime unit and a serial COM port of the command computer; if the command computer lacks a serial port but has only USB2.0 ports instead, you will need a USB2.0-to-serial adapter). The Windows GUI can be accessed remotely (through a phone line serving the TalkAnytime's "Command Modem" port that connects the command computer to the remote TalkAnytime unit through the unit's built-in modem.

The second GUI, the web GUI, is built into the TalkAnytime unit. The TalkAnytime web GUI is accessible to the command computer via the Internet or other IP network using a web browser.

If you intend to use the web GUI, you will still need *first* to use the Windows GUI to set an IP address for the TalkAnytime unit. After an IP address has been established for the TalkAnytime unit, all subsequent configuration can be done using the web GUI. Because of the obvious problem of conflicts, you cannot use both GUIs at the same time.

Two Types of Configuration Parameters. There are two ways in which the TalkAnytime must be configured before operation: technical configuration and phonebook configuration.

Technical Configuration. First, the TalkAnytime must be configured to operate with technical parameter settings that will match the equipment with which it interfaces. There are six types of technical parameters that must be set.

These technical parameters pertain to
(1) its operation in an IP network,
(2) its operation with telephony equipment,
(3) its transmission of digitized voice packets,
(4) certain telephony attributes that are common to particular nations or regions,
(5) its operation with a mail server on the same IP network (per SMTP parameters) such that log reports about VoIP telephone call traffic can be sent to the administrator by email, and
(6) selecting the method by which log reports will be made accessible.

The process of specifying values for the various parameters in these six categories is what we call "technical configuration" and it is described in this chapter.

Phonebook Configuration. The second type of configuration that is required for the TalkAnytime pertains to the phone number dialing sequences that it will receive and transmit when handling calls. Dialing patterns will be affected by the PBX/telephony equipment to which it is connected. We call this "Phonebook Configuration," and it is described in Chapter 6. The *Quick Start Guide* chapter of this manual (**Chapter 2**) presents additional information on phonebook setup.

Website Implementation. The TalkAnytime unit must be on the same local network as your web server. A link must be set up that will direct callers to the IP address of the TalkAnytime unit using a URL that

includes describes several attributes of the TalkAnytime service. That link will involve a graphics file that will be used as an icon. The graphics file must be listed on the web page in a mouse-related command. TalkAnytime also requires that several operating parameters be specified in a short Java script command line. That Java script command line will also include a description of the characteristics required of the user's computer if TalkAnytime is to be used.

Website implementation is described later in this chapter.

Local Configuration

This manual primarily describes local configuration with the Windows GUI. After IP addresses have been set locally using the Windows GUI, other configuration tasks, as well as operation and maintenance tasks (see the *Operation and Maintenance* chapter of this manual), can be handled through either the web browser GUI or the Windows GUI. Essentially, the Windows GUI and web-browser GUI differ only graphically, not functionally.

Pre-Requisites

To complete the configuration of the TalkAnytime unit, you ***must*** know several things about the overall system.

Before configuring your TalkAnytime Gateway unit, you must know the values for several IP and telephone parameters that describe the IP network system and telephony system (PBX or telco central office equipment) with which the digital TalkAnytime will interact. If you plan to receive log reports on phone traffic by email (SMTP), you must arrange to have an email address assigned to the TalkAnytime unit on the email server on your IP network. A summary of this configuration information appears on page 26 ("Config Info CheckList").

IP Parameters

The following parameters must be known about the network (LAN, WAN, Internet, etc.) to which the TalkAnytime unit will connect:

➳	*Ask your computer network administrator.*	
	IP Network Parameters: Record for this TalkAnytime unit.	
	• IP Address	
	• IP Mask	
	• Gateway	
	• Domain Name Server (DNS) Info (optional)	
	• Determine whether or not 802.1p Packet Prioritization will be used.	

Write down the values for these IP parameters. You will need to enter these values in the "IP Parameters" screen in the Configuration section of the TalkAnytime software.

T1 Telephony Parameters (for TA2410)

The following parameters must be known about the PBX or telco central office equipment to which the T1 TalkAnytime unit will connect:

➳	**T1 Phone Parameters** *Ask phone company or PBX maintainer.*	*Info needed to operate:* **TA2410**
	T1 Parameters: Record for this TalkAnytime unit.	
	• Which frame format is used? ESF___ or D4___	
	• Which CAS or PRI protocol is used? _____	
	• Clocking: Does the PBX or telco switch use internal or external clocking? _____ Note that the setting used in the TalkAnytime unit will be the opposite of the setting used by the telco/PBX.	
	• Which line coding is used? AMI___ or B8ZS___	

Write down the values for these T1 parameters. You will need to enter these values in the "T1/E1/ISDN Parameters" screen in the Configuration section of the TalkAnytime software.

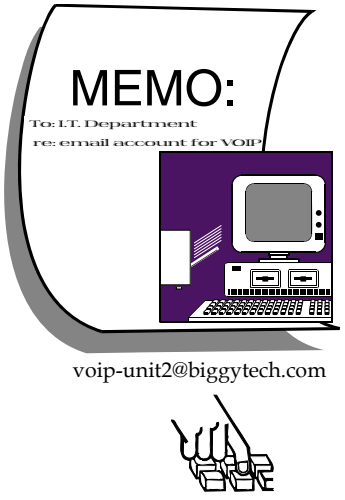
E1 Telephony Parameters (for TA3010)

The following parameters must be known about the PBX or telco central office equipment to which the E1 TalkAnytime unit will connect:

➳	**E1 Phone Parameters** *Ask phone company or PBX maintainer.*	*Info needed to operate:* **TA3010**
	E1 Parameters: Record for this TalkAnytime unit.	
	• Which frame format is used? Double Frame_____ MultiFrame w/ CRC4_____ MultiFrame w/ CRC4 modified_____	
	• Which CAS or PRI protocol is used? _____	
	• Clocking: Does the PBX or telco switch use internal or external clocking? _____ Note that the setting used in the TalkAnytime unit will be the opposite of the setting used by the telco/PBX.	
	• Which line coding is used? AMI___ or HDB3___	
	• Pulse shape level?: (most commonly 0 to 40 meters)	

Write down the values for these E1 parameters. You will need to enter these values in the "T1/E1/ISDN Parameters" screen in the Configuration section of the TalkAnytime software.

SMTP Parameters (for email call log reporting)

required if log reports of TA unit's call traffic are to be sent by email	**Optional**
SMTP Parameters Preparation Task: Ask Mail Server administrator to set up email account (with password) for the TalkAnytime unit itself. Be sure to give a unique identifier to each individual TalkAnytime unit. . Get the IP address of the mail server computer, as well.	 voip-unit2@biggytech.com

Config Info CheckList

Type of Config Info Gathered	TalkAnytime Configuration screen on which to enter Config Info	Info Obtained √	Info Entered
IP info for TalkAnytime unit ● IP address ● Gateway ● DNS IP (if used) ● 802.1p Prioritization (if used)	Ethernet/IP Parameters		
Frame Format (Choices: ESF, D4, F4, SLC96)	T1/E1/ISDN Parameters (TA2410 only)		
Frame Format (Choices: Double Frame, Multi-Frame w/ CRC4, Multi-Frame w/ CRC4 Modified)	T1/E1/ISDN Parameters (TA3010 only)		
CAS Protocol (Choices: FXS Loop Start, E&M Wink, E&M Wink w/ Dial Tone, FXO Ground Start, FXO Loop Start, FXS Ground Start, E&M Immediate, MFR2-China, Clear Channel)	T1/E1/ISDN Parameters		
ISDN-PRI Protocol (only if ISDN-PRI is used) (Choices: Network, Terminal)	T1/E1/ISDN Parameters		
Clocking (Choices: Internal, External)	T1/E1/ISDN Parameters		
Line Coding (Choices: AMI, B8ZS)	T1/E1/ISDN Parameters		
Pulse Shape Level (Choices: 0 – 40 m)	T1/E1/ISDN Parameters		
Country Code	Regional Parameters		
Email address for voip (optional)	SMTP Parameters		
Reminder: *Be sure to* **Save Setup** *after entering configuration values.*			

Local Configuration Procedure (Summary)

After the TalkAnytime configuration software has been installed in the 'Command' PC (which is connected to the TalkAnytime unit), several steps must be taken to configure the TalkAnytime unit to function in its specific setting. Although the summary below includes all of these steps, some are optional.

1. Check Power and Cabling.

2. Start TalkAnytime Configuration Program.

3. Confirm Connection.

4. Solve Common Connection Problems.

   A. Fixing a COM Port Problem.

   B. Fixing a Cabling Problem.

5. Familiarize yourself with configuration parameter screens and how to access them.

6. Set Ethernet/IP Parameters.

7. Set up web browser GUI (optional).

8. Set Voice/Fax Parameters.

9. Set T1 or E1 Parameters.

10. Set ISDN Parameters (if ISDN-PRI is used instead of T1 or E1).

11. Set Regional Parameters (Phone Signaling Tones & Cadences and setup for built-in Remote Configuration/Command Modem).

12. Set Custom Tones and Cadences (optional).

13. Set SMTP Parameters (applicable if Log Reports are via Email).

14. Set Log Reporting Method (GUI, locally in TalkAnytime Configuration program; or, SMTP, via email).

15. Set Baud Rate (of COM port connection to 'Command' PC).

16. View System Info screen and set updating interval (optional).

17. Save the TalkAnytime configuration.

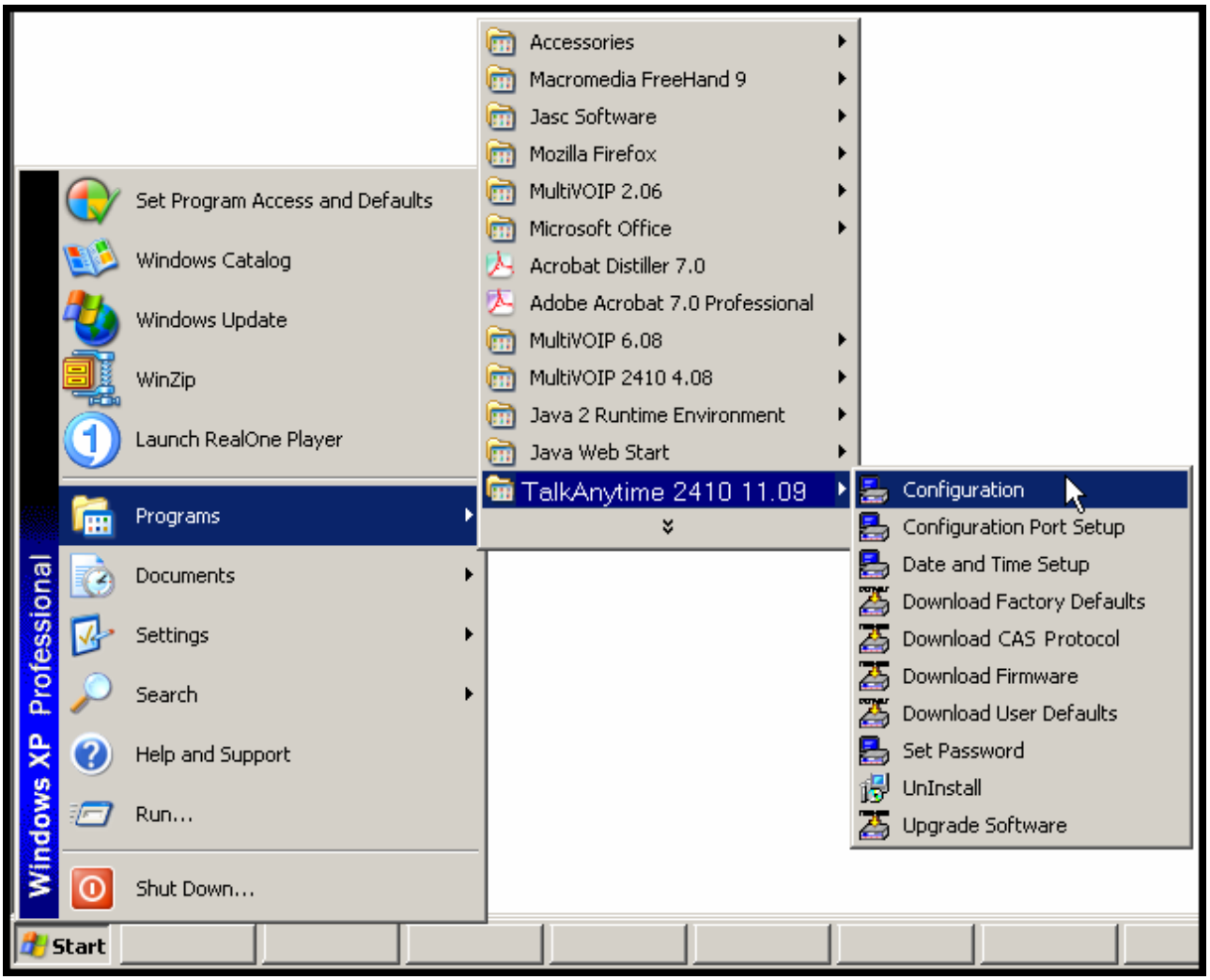
18. Create a User Default Configuration (optional).

When technical configuration is complete, you will need to configure the TalkAnytime unit's inbound phonebook.

Local Configuration Procedure (Detailed)

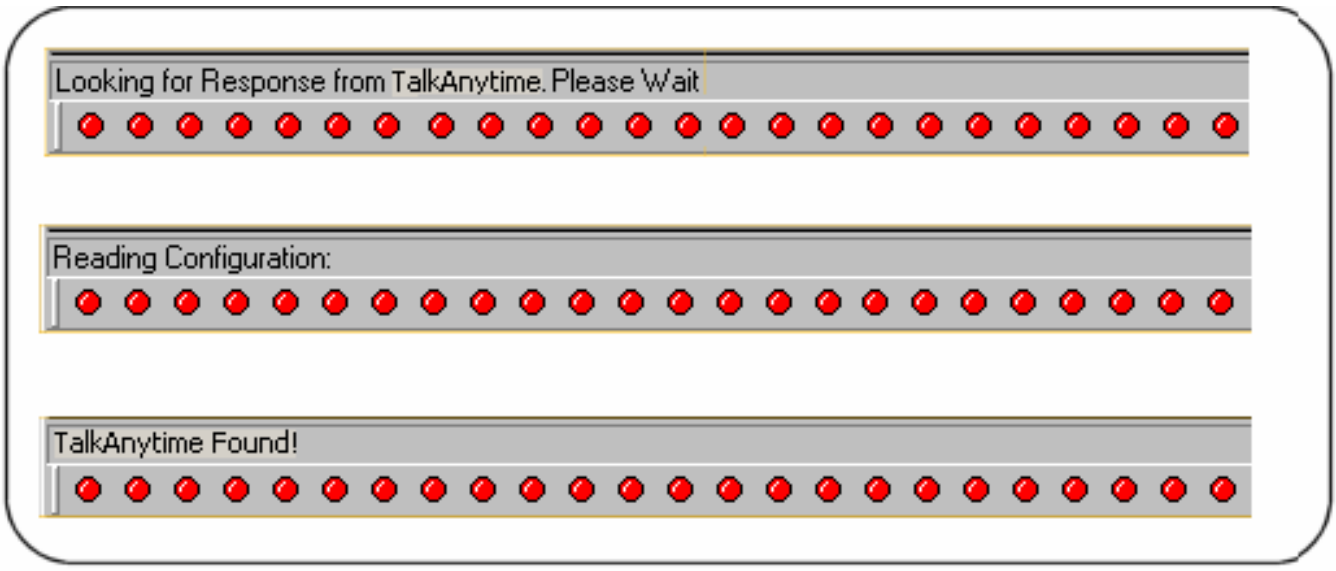
You can begin the configuration process as a continuation of the TalkAnytime software installation. You can establish your configuration or modify it at any time by launching the TalkAnytime program from the Windows **Start** menu.

1. **Check Power and Cabling**. Be sure the TalkAnytime unit is turned on and connected to the computer via the TalkAnytime unit's Console Port (RJ45 connector is connected at the TalkAnytime unit; DB9 connector is connected at the computer's COM port; if the computer has only USB2.0 ports and no serial ports, use a USB2.0-to-serial adaptor).
2. **Start TalkAnytime Configuration Program**. Launch the TalkAnytime program from the Windows **Start** menu (from the folder location determined during installation).



3. **Confirm Connection**. If the TalkAnytime unit is set for an available COM port and is correctly cabled to the PC, the TalkAnytime main screen will appear. (If the main screen appears *grayed out* and seems inaccessible, go to step 4.)

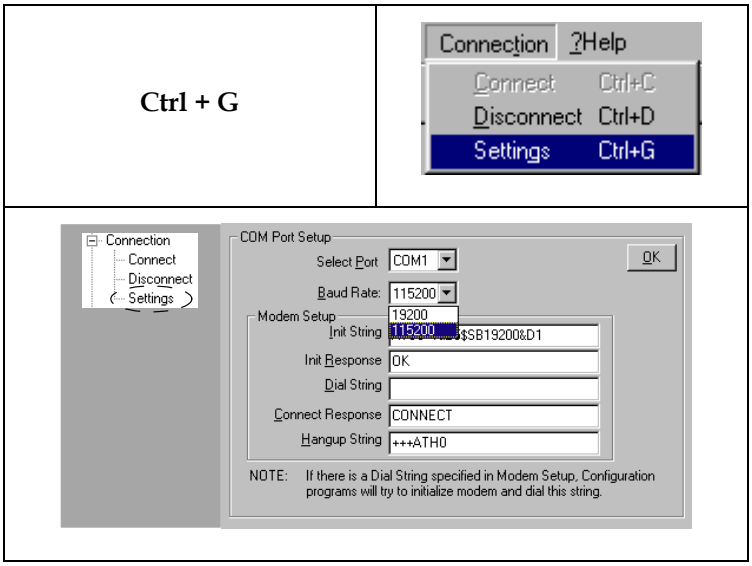
In the lower left corner of the screen, the connection status of the TalkAnytime will be displayed. The messages in the lower left corner will change as detection occurs. The message "TalkAnytime Found" confirms that the TalkAnytime unit is in contact with the TalkAnytime configuration program. Skip to step 5.



4. **Solving Common Connection Problems**.

A. Fixing a COM Port Problem. If the TalkAnytime main screen appears but is grayed out and seems inaccessible, the COM port that was specified for its communication with the PC is unavailable and must be changed. An error message will appear.

To change the COM port setting, use the **COM Port Setup** dialog box, which is accessible via the keyboard shortcut **Ctrl + G** or by going to the **Connection** pull-down menu and choosing "Settings." In the "Select Port" field, select a COM port that is available on the PC. (If no COM ports are currently available, re-allocate COM port resources in the computer's MS Windows operating system to make one available. If your computer has USB2.0 ports but no serial COM ports, you will need a USB2.0-to-serial adaptor.)



4B. Fixing a Cabling Problem. If the TalkAnytime unit cannot be located by the computer, three error messages will appear (saying "TalkAnytime Not Found" and "Phone Database Not Read").

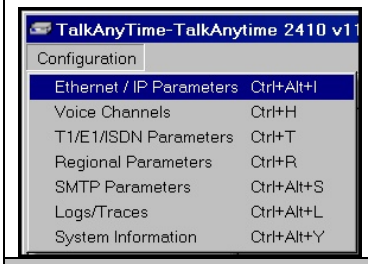
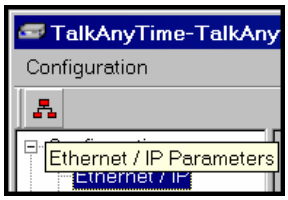
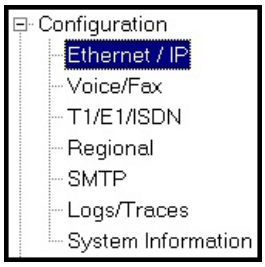
In this case, the TalkAnytime unit is simply disconnected from the network. For instructions on TalkAnytime cable connections, see the Cabling section of Chapter 3.

5. **Configuration Parameter Groups: Getting Familiar, Learning About Access**. The first part of configuration concerns Ethernet/IP parameters, Voice/FAX parameters, T1/E1/ISDN parameters, Regional parameters, SMTP parameters, and Logs. In the TalkAnytime software, these six types of parameters are grouped together under "Configuration" and each has its own dialog box for entering values. A seventh screen, the System Information screen, presents a summary of important information about the voip but is read-only (that is, no parameters can be changed at this screen).

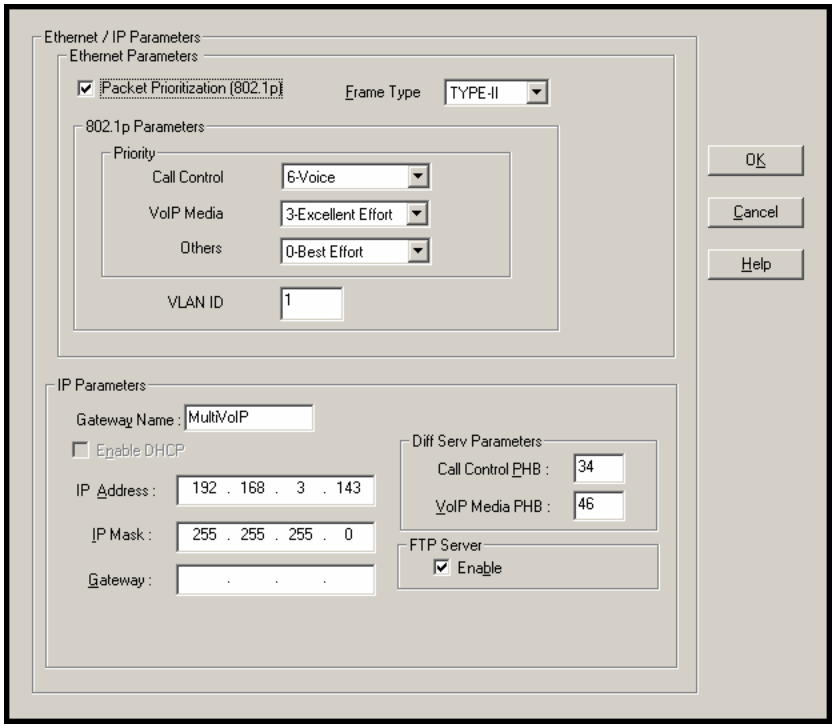
Generally, you can reach the dialog box for these parameter groups in one of four ways: pulldown menu, toolbar icon, keyboard shortcut, or sidebar.

6. **Set Ethernet/IP Parameters.** This dialog box can be reached by pulldown menu, toolbar icon, keyboard shortcut, or sidebar.

Accessing "Ethernet/IP Parameters"

Pulldown	Icon
	
Shortcut	**Sidebar**
`Ctrl + Alt + I`	

In each field, enter the values that fit your particular network.



The **Ethernet/IP Parameters** fields are described in the tables and text passages below. Note that both DiffServ parameters (Call Control PHB and VoIP Media PHB) must be set to zero if you enable Packet Prioritization (802.1p). Nonzero DiffServ values negate the prioritization scheme.

Ethernet/IP Parameter Definitions		
Field Name	**Values**	**Description**
Ethernet Parameters		
Packet Prioritization (802.1p)	Y/N	Select to activate prioritization under 802.1p protocol (described below). .
Frame Type	Type II, SNAP	Must be set to match network's frame type. Default is Type II.
802.1p	A draft standard of the IEEE about data traffic prioritization on Ethernet networks. The 802.1p draft is an extension of the 802.1D bridging standard. 802.1D determines how prioritization will operate within a MAC-layer bridge for any kind of media. The 802.1Q draft for virtual local-area-networks (VLANs) addresses the issue of prioritization for Ethernet networks in particular. 802.1p enacts this Quality-of-Service feature using 3 bits. This 3-bit code allows data switches to reorder packets based on priority level. The descriptors for the 8 priority levels are given below. **802.1p PRIORITY LEVELS** *LOWEST PRIORITY* 1 – **Background**: Bulk transfers and other activities permitted on the network, but should not affect the use of network by other users and applications. 2 – **Spare**: An unused (spare) value of the user priority. 0 – **Best Effort** (default): Normal priority for ordinary LAN traffic. 3 – **Excellent Effort**: The best effort type of service that an information services organization would deliver to its most important customers. 4 – **Controlled Load**: Important business applications subject to some form of "Admission Control", such as preplanning of Network requirement, characterized by bandwidth reservation per flow. 5 – **Video**: Traffic characterized by delay < 100 ms. 6 – **Voice**: Traffic characterized by delay < 10 ms. 7 - **Network Control**: Traffic urgently needed to maintain and support network infrastructure. *HIGHEST PRIORITY*	
Call Control Priority	0-7, where 0 is lowest priority	Sets the priority for signaling packets.
VoIP Media Priority	0-7, where 0 is lowest priority	Sets the priority for media packets.
Others (Priorities)	0-7, where 0 is lowest priority	Sets the priority for SMTP, DNS, DHCP, and other packet types.
VLAN ID	1 - 4094	The 802.1Q IEEE standard allows virtual LANs to be defined within a network. This field identifies each virtual LAN by number.

Ethernet/IP Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
IP Parameter fields		
Gateway Name	alphanumeric	Descriptor of current voip unit to distinguish it from other units in system.
Enable DHCP	Y/N disabled by default	Dynamic Host Configuration Protocol is a method for assigning IP address and other IP parameters to computers on the IP network in a single message with great flexibility. IP addresses can be static or temporary depending on the needs of the computer.
IP Address	4-places, 0-255	The unique LAN IP address assigned to the TalkAnytime unit.
IP Mask	4-places, 0-255	Subnetwork address that allows for sharing of IP addresses within a LAN.
Gateway	4-places, 0-255.	The IP address of the device that connects your TalkAnytime to the Internet.
DiffServ Parameter fields	DiffServ PHB (Per Hop Behavior) values pertain to a differential prioritizing system for IP packets as handled by DiffServ-compatible routers. There are 64 values, each with an elaborate technical description. These descriptions are found in TCP/IP standards RFC2474, RFC2597, and, for present purposes, in RFC3246, which describes the value 34 (34 decimal; 22 hex) for Assured Forwarding behavior (default for Call Control PHB) and the value 46 (46 decimal; 2E hexadecimal) for Expedited Forwarding behavior (default for Voip Media PHB). Before using values other than these default values of 34 and 46, consult these standards documents and/or a qualified IP telecommunications engineer. To disable DiffServ, configure both fields to 0 decimal. The next page explains DiffServ in the context of the IP datagram.	
Call Control PHB	0 – 63 default = 34 .	Value is used to prioritize call setup IP packets.
Voip Media PHB	0 – 63 default = 46 *n*	Value is used to prioritize the RTP/RTCP audio IP packets.

The IP Datagram with Header, Its Type-of-Service field, & DiffServ

bits =>

0	4	8	16	19	24	31
VERS	HLEN	TYPE OF SERVICE	TOTAL LENGTH			
IDENTIFICATION			FLAGS	FRAGMENT OFFSET		
TIME TO LIVE	PROTOCOL		HEADER CHECKSUM			
SOURCE IP ADDRESS						
DESTINATION IP ADDRESS						
IP OPTIONS (if any)					PADDING … ***end of header***	
DATA						
…						

The TOS field consists of eight bits, of which only the first six are used. These six bits are called the "Differentiated Service Codepoint" or DSCP bits.

The Type of Service or "TOS" field

0	1	2	3	4	5	6	7
PRECEDENCE			D	T	R	*unused*	

The three 'Precedence' bits have eight values, 0-7, ranging from "normal" precedence (value of 0) to "network control" (value of 7). When set, the *D* bit requests low delay, the *T* bit requests high throughput, and the *R* bit requests high reliability.

Routers that support DiffServ can examine the six DSCP bits and prioritize the packet based on the DSCP value. The DiffServ Parameters fields in the Ethernet/IP Parameters screen allow you to configure the DSCP bits to values supported by the router. Specifically, the Voip Media PHB field relates to the prioritizing of audio packets (RTP and RTCP packets) and the Call Control PHB field relates to the prioritzing of non-audio packets (packets concerning call set-up and tear-down, gatekeeper registration, etc.).

The Call Control PHB parameter defaults to 34 decimal (22 hex; 100010 binary – consider vis-à-vis TOS field above) for Assured Forwarding behavior. The Voip Media PHB parameter defaults to the value 46 decimal (2E hex; 101110 binary – consider vis-à-vis TOS field above). To disable DiffServ, configure both fields to 0 decimal.

Ethernet/IP Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
FTP Parameter fields		
FTP Server Enable	Y/N Default = disabled See "FTP Server File Transfers" in *Operation & Maintenance* chapter.	TalkAnytime unit has an FTP Server function so that firmware and other important operating software files can be transferred to the unit via the network.

About Service Records

An SRV record holds the following information:

- **Service**: the symbolic name of the desired service.
- **Protocol**: this is usually either TCP or UDP.
- **Domain name**: the domain for which this record is valid.
- **TTL**: standard DNS time to live field.
- **Class**: standard DNS class field (this is always *IN*).
- **Priority**: the priority of the target host.
- **Weight**: A relative weight for records with the same priority.
- **Port**: the TCP or UDP port on which the service is to be found.
- **Target**: the hostname of the machine providing the service.

An example SRV record might look like this:

```
_sip._tcp.example.com 86400 IN SRV 0 5 5060 sipserver.example.com.
```

This expression denotes a server named sipserver.example.com. This server listens on TCP port 5060 for SIP protocol connections. The priority given here is 0, and the weight is 5.

7. **Set up the Web Browser GUI (Optional)**. After an IP address for the TalkAnytime unit has been established, you can choose to do any further configuration of the unit (a) by using the TalkAnytime web browser GUI, or (b) by continuing to use the TalkAnytime Windows GUI. If you want to do configuration work using the web browser GUI, you must first set it up. To do so, follow the steps below.

A. Set IP address of TalkAnytime unit using the TalkAnytime Configuration program (the Windows GUI).

B. Save Setup in Windows GUI.

C. Close Windows GUI.

D. Install Java program from TalkAnytime product CD (on first use only).

E. Open web browser.

F. Browse to IP address of TalkAnytime unit.

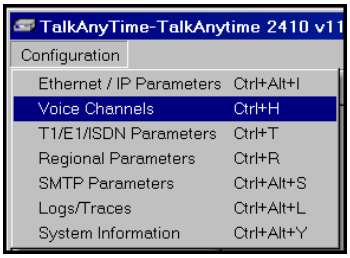
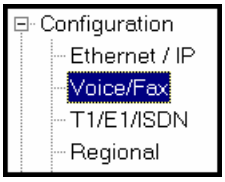
G. If username and password have been established, enter them when when prompted.

H. Set browser to allow pop-ups at least for the IP address at which the TalkAnytime unit is located. The TalkAnytime Web GUI makes extensive use of pop-up windows to access screens and commands.

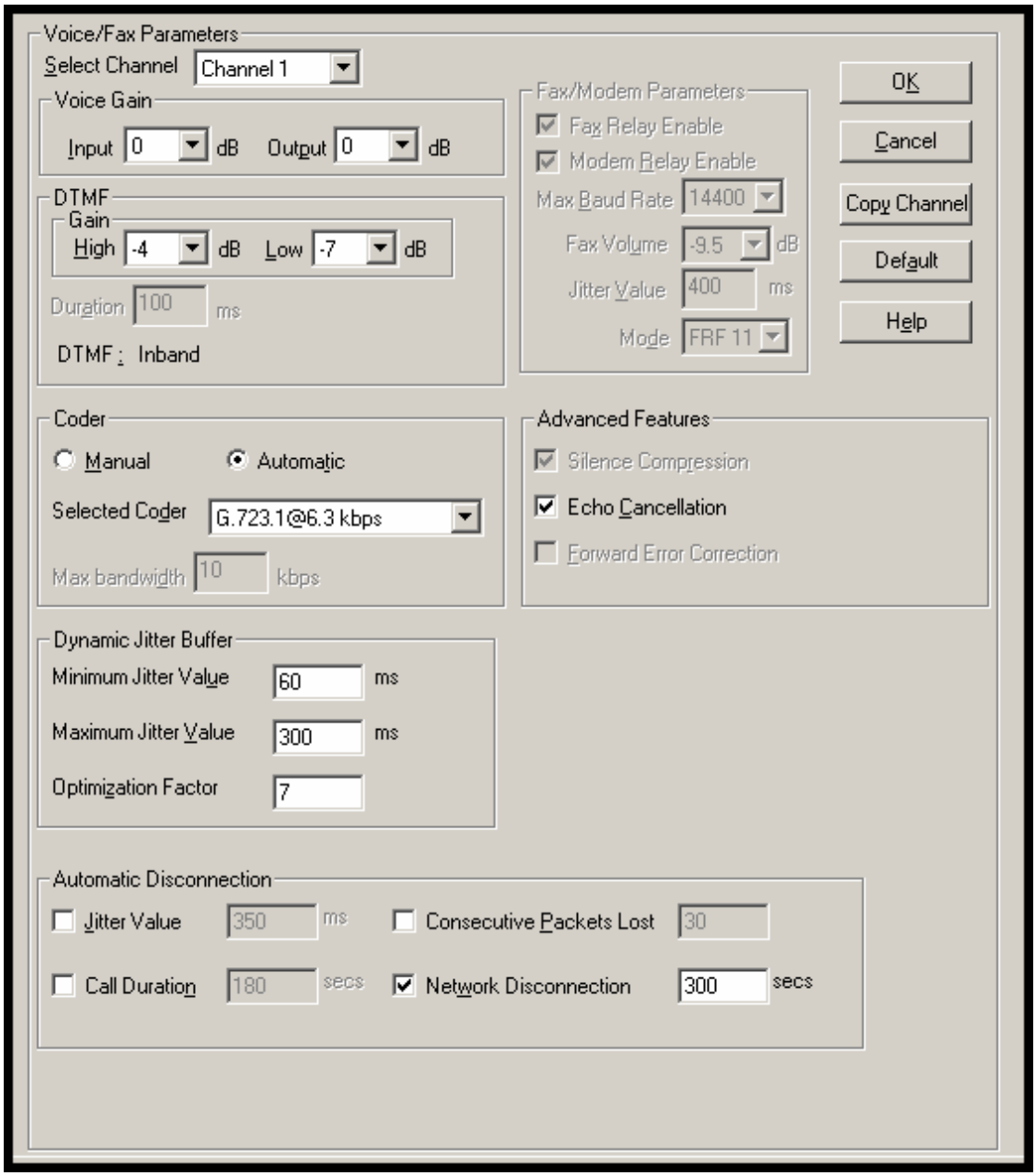
I. Use web browser GUI to configure or operate TalkAnytime unit. The configuration screens in the web browser GUI will have the same content as their counterparts in the Windows GUI; only the graphic presentation will be different.

For more details on enabling the TalkAnytime web GUI, see the "Web Browser Interface" section of the *Operation & Maintenance* chapter of this manual.

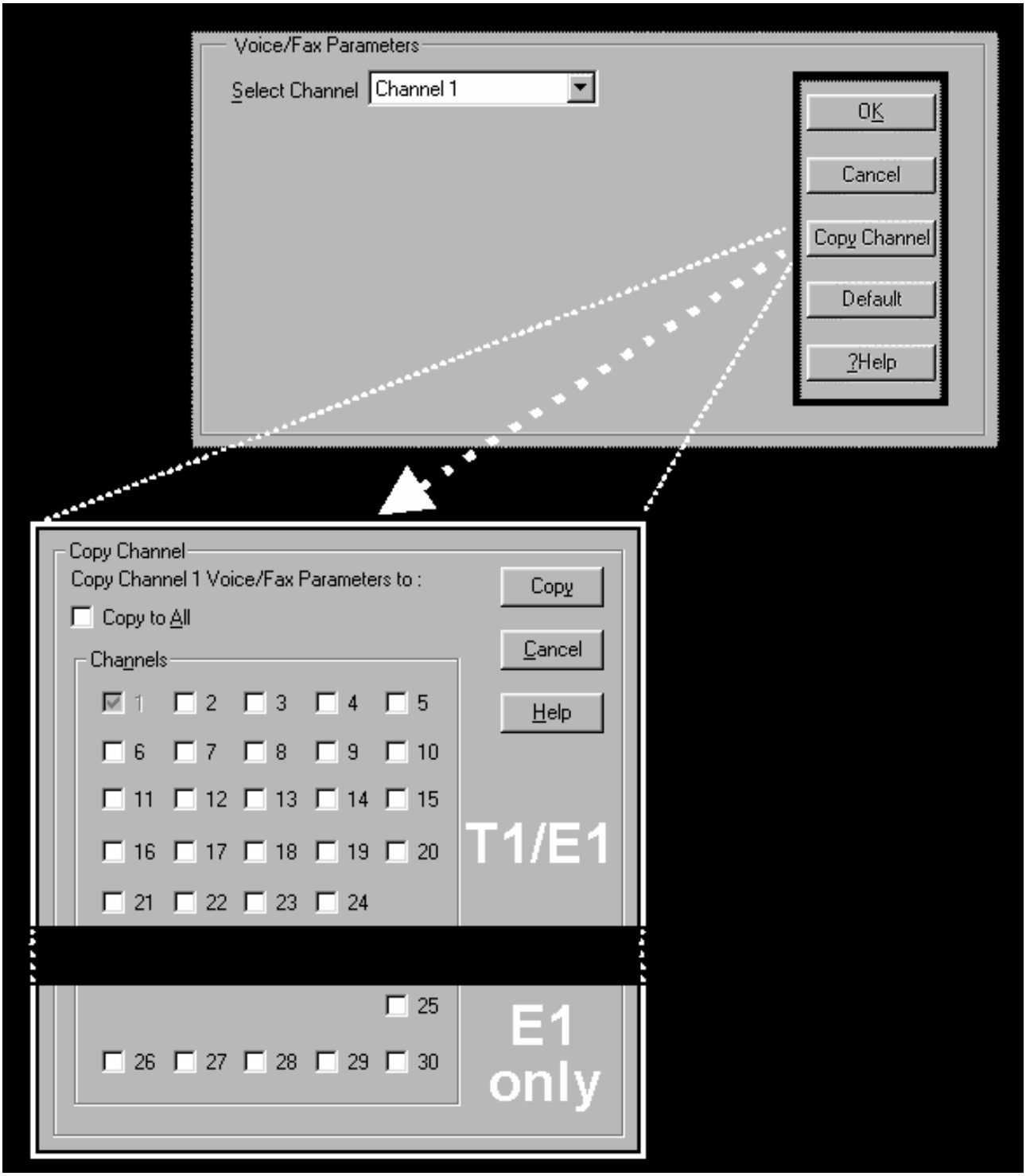
8. **Set Voice/FAX Parameters.** This dialog box can be reached by pulldown menu, toolbar icon, keyboard shortcut, or sidebar.

<table>
<tr><th colspan="2">Accessing “Voice/FAX Parameters”</th></tr>
<tr><th>Pulldown</th><th>Icon</th></tr>
<tr><td> 
</td><td>
</td></tr>
<tr><td></td><td></td></tr>
<tr><th>Shortcut</th><th>Sidebar</th></tr>
<tr><td>Ctrl + H</td><td> 
</td></tr>
</table>

In each field, enter the values that fit your particular network.



Note that Voice/FAX parameters are applied on a channel-by-channel basis. However, once you have established a set of Voice/FAX parameters for a particular channel, you can apply this entire set of Voice/FAX parameters to another channel by using the **Copy Channel** button and its dialog box. To copy a set of Voice/FAX parameters to all channels, select "Copy to All" and click **Copy**.



The **Voice/FAX Parameters** fields are described in the tables below.

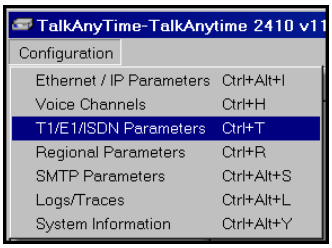
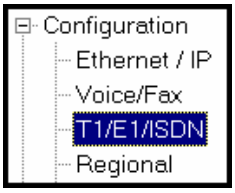
Voice/Fax Parameter Definitions		
Field Name	**Values**	**Description**
Default	--	When this button is clicked, all Voice/FAX parameters are set to their default values.
Select Channel	1-24 (2410) 1-30 (3010)	Channel to be configured is selected here.
Copy Channel	--	Copies the Voice/FAX attributes of one channel to another channel. Attributes can be copied to multiple channels or all channels at once.
Voice Gain	--	Signal amplification (or attenuation) in dB.
Input Gain	+31dB to –31dB	Modifies audio level entering voice channel before it is sent over the network to the remote VOIP. The default & recommended value is **0 dB**.
Output Gain	+31dB to –31dB	Modifies audio level being output to the device attached to the voice channel. The default and recommended value is **0 dB**.
DTMF Parameters		
DTMF Gain	--	The **DTMF Gain** (Dual Tone Multi-Frequency) controls the volume level of the DTMF tones sent out for Touch-Tone dialing.
DTMF Gain, High Tones	+3dB to -31dB & "mute"	Default value: **-4 dB**. Not to be changed except under supervision of MultiTech's Technical Support.
DTMF Gain, Low Tones	+3dB to -31dB & "mute"	Default value: **-7 dB**. Not to be changed except under supervision of MultiTech's Technical Support.
DTMF In/Out of Band	Out of Band, or Inband	When DTMF is set to **Inband**, the DTMF digits are passed through the TalkAnytime unit as they are received. In MultiVOIP products, which are related to the TalkAnytime unit, DTMF can also be set to Out of Band. In such cases, the TalkAnytime unit detects DTMF tones at its input and regenerates them at its output.
FAX/Modem Parameters		*Not applicable to TalkAnytime.*

Voice/Fax Parameter Definitions (cont'd)		
Coder Parameters		
Coder	Manual or Auto-matic	Determines whether selection of coder is manual or automatic. When Automatic is selected, the local and remote voice channels will negotiate the voice coder to be used by selecting the highest bandwidth coder supported by both sides without exceeding the Max Bandwidth setting. G.723, G.729, or G.711 are negotiated. *In general, this should be set to **Automatic**.*
Selected Coder	**G.711** a/u law 64 kbps; **G.726**, @ 16/24/32 /40 kbps; **G.727**, @ nine bps rates; **G.723.1** @ 5.3 kbps, 6.3 kbps; **G.729**, 8kbps; **Net Coder** @ 6.4, 7.2, 8, 8.8, 9.6 kbps	Select from a range of coders with specific bandwidths. The higher the bps rate, the more bandwidth is used. The channel that you are calling must have the same voice coder selected. Default = G.723.1 @ 6.3 kbps, as required for H.323. Here 64K of digital voice are compressed to 6.3K, allowing several simultaneous conversations over the same bandwidth that would otherwise carry only one. To make selections from the Selected Coder drop-down list, the Manual option must be enabled.
Max bandwidth (coder)	11 – 128 kbps	Not applicable for TalkAnytime units.
Advanced Features		
Silence Compression	--	Not applicable for TalkAnytime units.
Echo Cancellation	Y/N	Determines whether echo cancellation is enabled (checked) for this voice channel. **Echo Cancellation** removes echo and improves sound quality. Default = on.
Forward Error Correction	Y/N	Not applicable for TalkAnytime units.

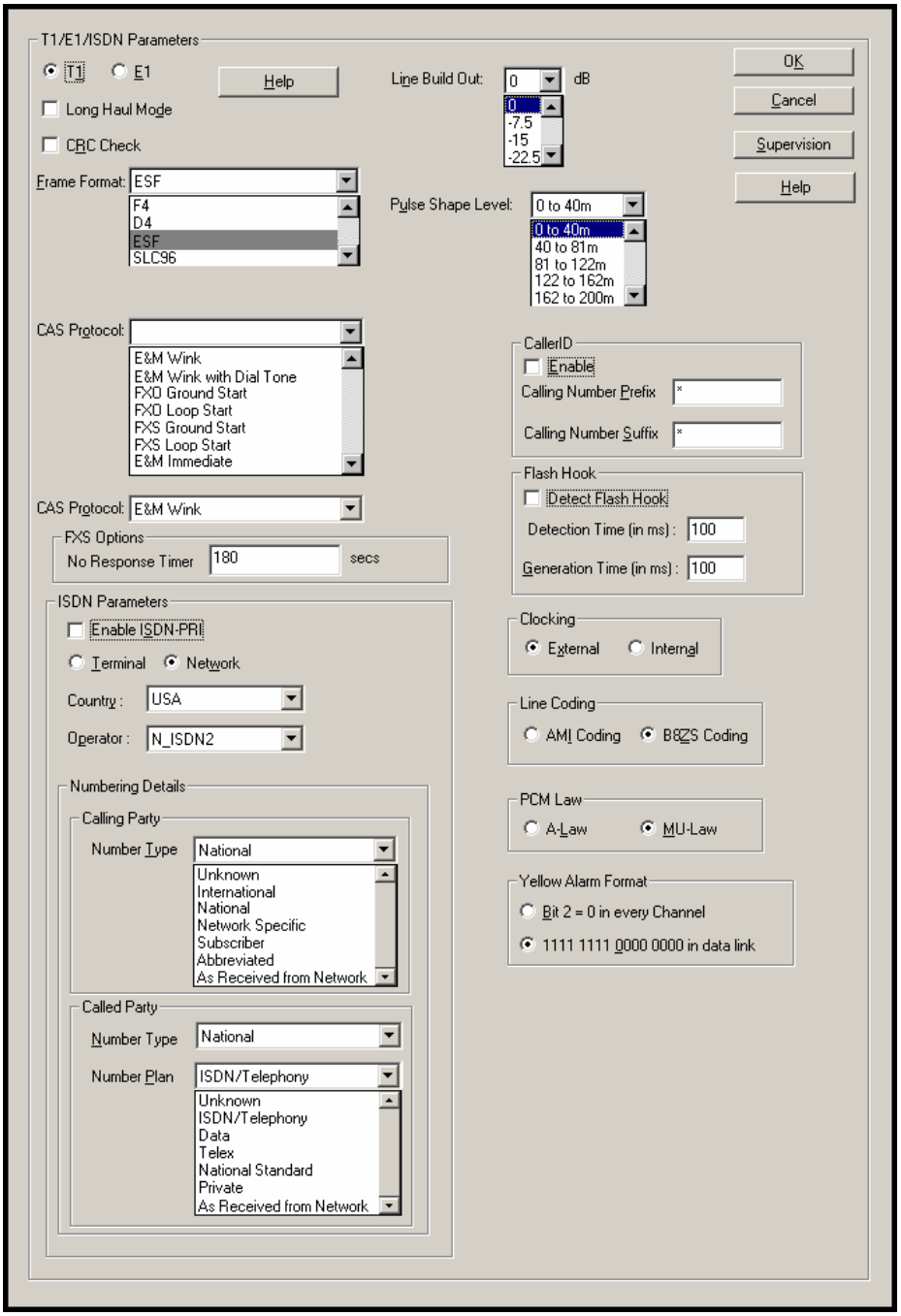
Voice/Fax Parameter Definitions (cont'd))		
Field Name	**Values**	**Description**
Dynamic Jitter Buffer		
Dynamic Jitter Buffer		**Dynamic Jitter** defines a minimum and a maximum jitter value for voice communications. When receiving voice packets from a remote source, varying delays between packets may occur due to network traffic problems. This is called Jitter. To compensate, the TalkAnytime unit uses a Dynamic Jitter Buffer. The Jitter Buffer enables the TalkAnytime unit to wait for delayed voice packets by automatically adjusting the length of the Jitter Buffer between configurable minimum and maximum values. An Optimization Factor adjustment controls how quickly the length of the Jitter Buffer is increased when jitter increases on the network. The length of the jitter buffer directly effects the voice delay on voip calls.
Minimum Jitter Value	60 to 400 ms	The minimum dynamic jitter buffer of **60** milliseconds is the minimum delay that would be acceptable over a low jitter network. Default = 150 msec
Dynamic Jitter		
Maximum Jitter Value	60 to 400 ms	The maximum dynamic jitter buffer of **400** milliseconds is the maximum delay tolerable over a high jitter network. Default = 300 msec
Optimizat-ion Factor	0 to 12	The **Optimization Factor** determines how quickly the length of the Dynamic Jitter Buffer is changed based on actual jitter encountered on the network. Selecting the minimum value of 0 means low voice delay is desired, but increases the possibility of jitter-induced voice quality problems. Selecting the maximum value of 12 means highest voice quality under jitter conditions is desired at the cost of increased voice delay. Default = **7**.

Voice/Fax Parameter Definitions (cont'd))		
Field Name	**Values**	**Description**
Auto Disconnect		
Automatic Disconnect-ion	--	The **Automatic Disconnection** group provides four options which can be used singly or in any combination.
Jitter Value	1-65535 milli-seconds	The **Jitter Value** defines the average inter-arrival packet deviation (in milliseconds) before the call is automatically disconnected. The default is **300** milliseconds. A higher value means voice transmission will be more accepting of jitter. A lower value is less tolerant of jitter. Inactive by default. When active, default = 300 ms. However, value must equal or exceed Dynamic Minimum Jitter Value.
Call Duration	1-65535 seconds	**Call Duration** defines the maximum length of time (in seconds) that a call remains connected before the call is automatically disconnected. Inactive by default. When active, default = **180** sec. This may be too short for most configurations, requiring upward adjustment.
Consecutive Packets Lost	1-65535	**Consecutive Packets Lost** defines the number of consecutive packets that are lost after which the call is automatically disconnected. Inactive by default. When active, default = **30**
Network Discon-nection	1 to 65535 seconds; Default = 30 sec.	Specifies how long to wait before disconnecting the call when IP network connectivity with the remote site has been lost.

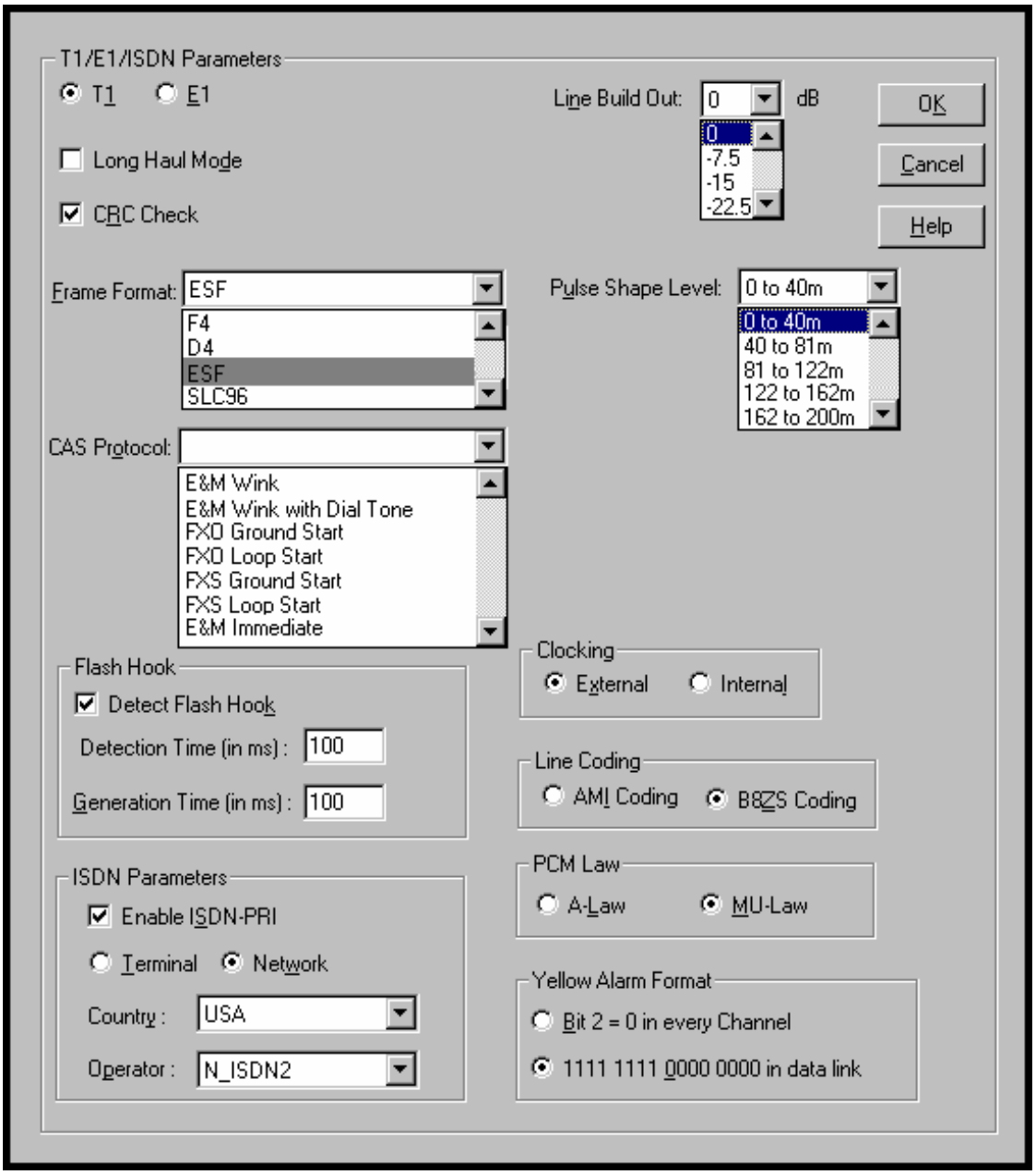
9. **Set T1/E1/ISDN Parameters.** This dialog box can be reached by pulldown menu, keyboard shortcut, or sidebar.

Accessing "T1/E1/ISDN Parameters"	
Pulldown	**Icon**
	--
Shortcut	**Sidebar**
`Ctrl + T`	

In each field, enter the values that fit your particular network.

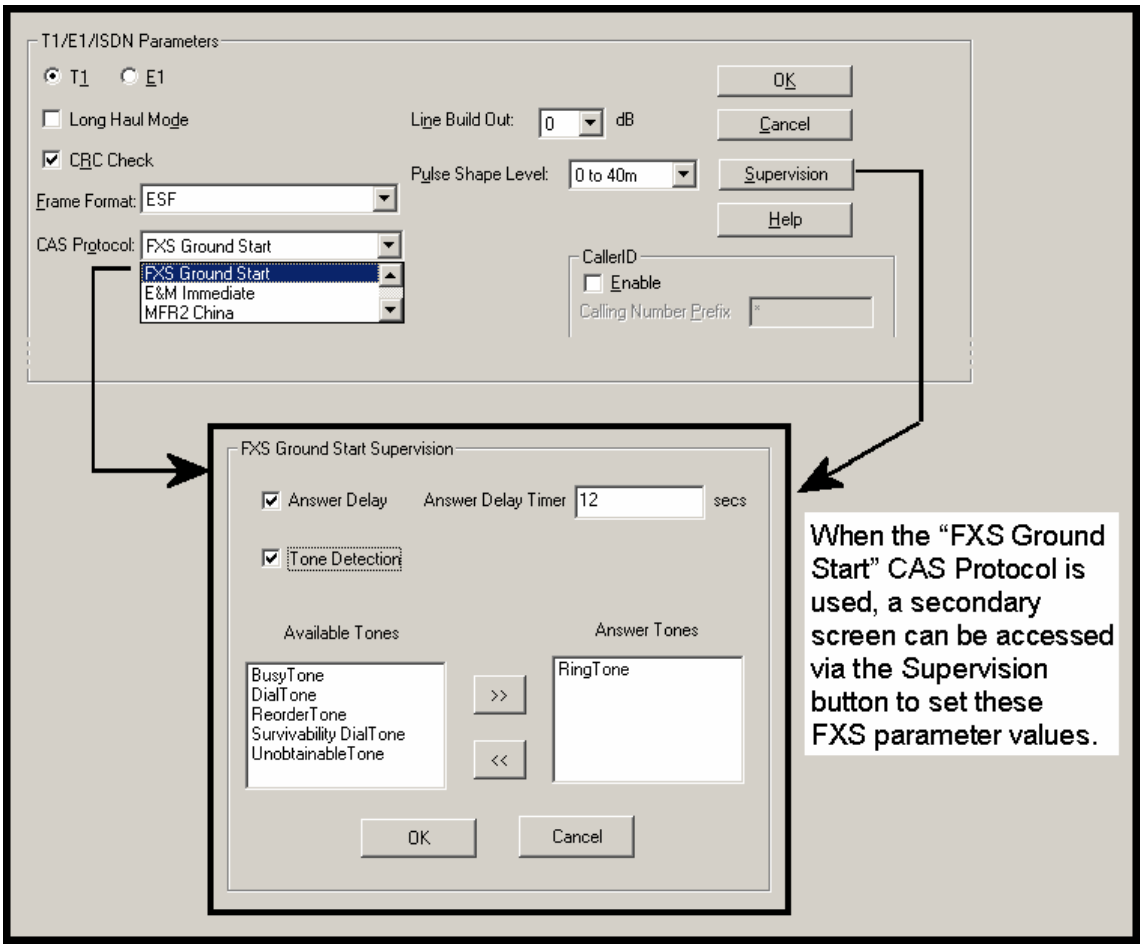


T1 Parameters. The parameters applicable to T1 and their values are shown in the figure below. These **T1 Parameter** fields are described in the tables that follow.



T1 Parameter Definitions		
Field Name	**Values**	**Description**
T1/E1/ISDN	T1	North American digital telephony standard.
Long-Haul Mode	Y/N	In Long-Haul Mode, the TalkAnytime automatically recovers received signals as low as –36 dB. The maximum reachable length with 22 AWG cable is 2000 meters. When Long-Haul Mode is disabled, signals as low as –10 dB can be received. Default: disabled.
CRC Check (Cyclic Redundancy Check)	Y/N	When enabled, allows generation and checking of CRC bits. If not enabled, all check bits in the transmit direction are set. Only applies to ESF frame format. Default: enabled.
Frame Format	F4, D4, ESF, SLC96	Frame Format of TalkAnytime should match that used by PBX or telco. ESF and D4 are commonly used.
CAS Protocol	E&M Immed Strt E&M Wink Start E&M Wink with dial tone FXO Ground Strt FXO Loop Start FXS Ground Strt FXS Loop Start	Channel Associated Signaling (CAS) is a method of incorporating telephony signaling info into a T1 voice/data stream. In CAS, the signaling bits (the A, B, C, and D bits) are multiplexed into the signal stream of each T1 channel. (By contrast, in Common Channel Signaling (CCS), one channel handles signaling for all other channels.) Each CAS protocol defines the states of the signaling bits during the various stages of a call (IDLE, SEIZED, ANSWER, RING-ON, RING-OFF). The CAS protocol code allows the TalkAnytime to interact properly with the PBX or central-office switch that it serves. Match this parameter to the setting of PBX or central-office switch.
FXS Options – No Response Timer	1 – 65535 (in seconds)	Length of time before call connection attempt is abandoned. Applicable only when an FXS CAS protocol is selected.

For TalkAnytime units, supervision of CAS protocols is supported only forFXS Ground Start and FXS Loop Start.



The parameters described in the following table for FXS Ground Start also apply to FXS Loop Start.

T1 Parameter Definitions		
Field Name	**Values**	**Description**
FXS Ground/Loop Start Supervision Parameters		
Answer Delay (Enable)	Y/N	When this option is selected, the FXS interface sends the connection notice to the calling party only when the Answer Delay Timer expires. The connection notice is sent regardless of whether or not the called extension has gone offhook.
Answer Delay Timer	numeric (in seconds)	When Answer Delay is enabled, this value determines when the FXS interface sends the connection notice.

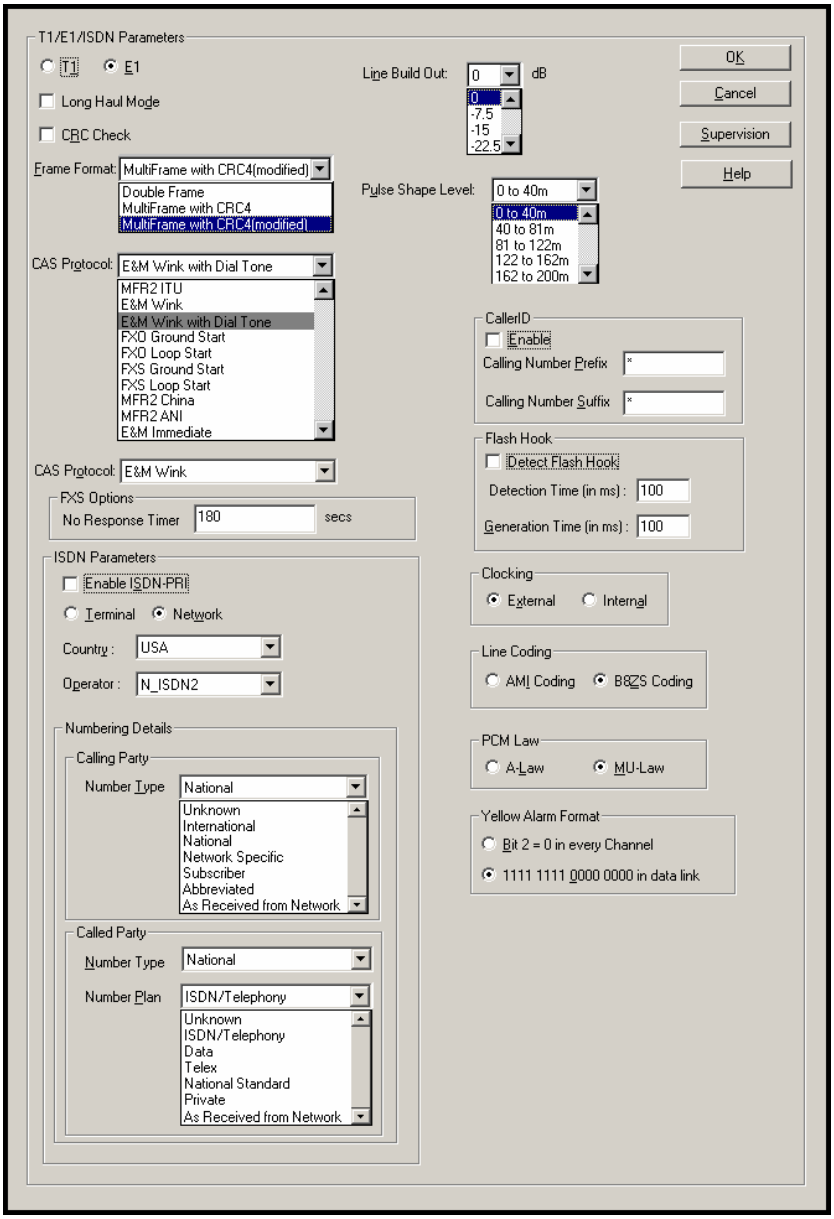
T1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
FXS Ground/Loop Start Supervision Parameters		
Tone Detection (Enable)	Y/N	After a specified tone (chosen from the Available Tones list) coming from the PBX is stopped, the FXS interface will send the 'connect' signal to the calling party.
Available Tones (List)	Busy Tone, Dial Tone, Reorder Tone Survivability Dial Tone, Unobtainable Tone	List from which tones can be chosen to signal call answer.
Answer Tones (List)	Busy Tone, Dial Tone, Reorder Tone Survivability Dial Tone, Unobtainable Tone	Currently chosen call-answer supervision tone.
ISDN Parameters		
Field Name	**Values**	**Description**
Enable ISDN-PRI	Y/N	If digital connection is ISDN-PRI type, this box should be checked. When ISDN is enabled, the "CAS Protocols" field is grayed out (ISDN has its own signaling method).
Terminal/ Network	either "Terminal" or "Network"	When "Terminal" is selected, it indicates that the TalkAnytime unit should emulate the subscriber (terminal) side of the digital connection. When "Network" is selected, it indicates that the TalkAnytime unit should emulate the central office (network) side of the digital connection. Setting used for TalkAnytime unit must be opposite to the setting used in the PBX. For example, if the PBX is set to "Terminal," then the TalkAnytime unit must be set to "Network."

T1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
ISDN Parameters		
Country	see table, later this chapter	Country in which TalkAnytime is operating with ISDN.
Operator	see table, later this chapter	Indicates phone switch manufacturer/model or refers to telco so as to specify the switching system in question. ISDN is implemented somewhat differently in different switches.
Note on Country & Operator options.	__	[ISDN implementation options are shown, arranged by country, in a table below – soon after E1 Parameter Definitions.]
Numbering Details Parameters		
Calling Party Number Type	unknown, national, international, network specific, subscriber, abbreviated, as received from network	Calling party type is part of calling party Number Information element that is sent on ISDN line. The Calling party number information element identifies the origin of a call.
Called Party Number Type	unknown, national, international, network specific, subscriber, abbreviated, as received from network	Called Party Number Type and Called Party Number Plan are part of Calling Party Number Information element that is sent on ISDN line. The Called party number information element identifies destination of a call.
Called Party Number Plan	unknown, ISDN telephony, data, telex, national standard, private, as received from network	The call dialing plan under which the called party operates.

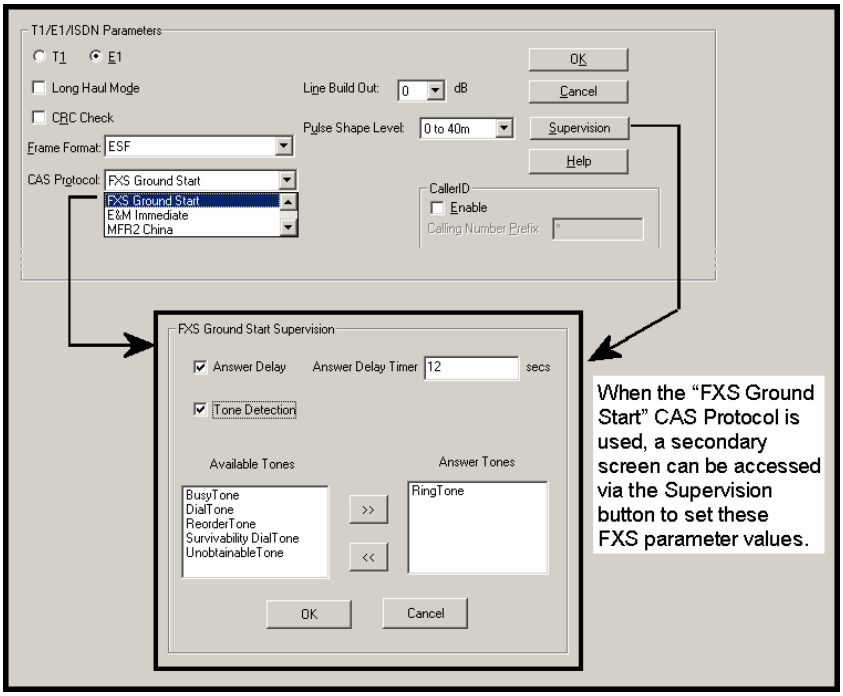
T1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
General T1/E1/ISDN Parameters		
Line Build Out	0 dB, -7.5 dB, -15 dB, -22.5 dB	To reduce the crosstalk on received signals, a transmit attenuator can be placed in the data path. Transmit attenuation is selectable. **Default: O dB**
Pulse Shape Level	0 to 40 Meters 40 to 81 m 81 to 122 m 122 to 162 m 162 to 200 m	Refers to length of cable between TalkAnytime and PBX/telco in meters. Most common will be 0 to 40m.
Caller ID Parameters		*Not applicable to TalkAnytime.*
Caller ID Enable	Y/N	Turns Caller ID feature on (if checked) and off (if unchecked).
Calling Number Prefix (Caller ID)	0-9, *, #	A DTMF symbol used to mark the beginning of the calling party number for use with Caller ID. Maximum length: 4 characters.
Calling Number Suffix (Caller ID)	0-9, *, #	A DTMF symbol used to mark the end of the calling party number for use with Caller ID. Maximum length: 4 characters.
Flash Hook Parameters		*Not applicable to TalkAnytime.*
Detect Flash Hook	Y/N	This setting determines whether or not the MultiVOIP responds to hook-flash signals.
Detection Time	100 – 1500 milliseconds	Minimum hook-flash time that will be interpreted as a valid flash by the MultiVOIP.
Generation Time	100 – 1500 milliseconds	In some systems, a MultiVOIP might receive a hook-flash signal from an upstream device (a PBX, voip or other device) and must replicate it to a downstream device. This parameter determines the duration of the hook-flash signal that is passed to a downstream device.
Clocking	External/Internal	Set opposite to telco/PBX setting. Example: if telco clocking internal, set VOIP clocking as external.

T1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
Line Coding	AMI / B8ZS	Match to PBX or telco.
PCM Law	A-Law/Mu-Law	Match to PBX or telco. " Mu-law" is analog-to-digital compression/expansion standard used in North America. "A-law" is European standard.
Yellow Alarm Format	Bit 2 / 1111…	Depending on the Frame Format used, there are choices of Yellow Alarm format, as follows: **D4**: **-Bit2** = 0 in every speech channel **-FS** bit of frame 12 is forced to one. **ESF**: **-Bit2** = 0 in every speech channel **–1111111100000000** pattern in data link channel. Check with your PBX/telco administrator for the correct setting or use the default value (1111 …).

E1 Parameters. The parameters applicable to E1 and their values are shown in the figure below. These **E1 Parameter** fields are described in the tables that follow.



E1 Parameter Definitions		
Field Name	**Values**	**Description**
T1/E1/ISDN	E1	European standard.
Long-Haul Mode	Y/N	In Long-Haul Mode, the TalkAnytime automatically recovers received signals as low as –36 dB. The maximum reachable length with 22 AWG cable is 2000 meters. When Long-Haul Mode is disabled, signals as low as –10 dB can be received. Default: disabled.
CRC Check (Cyclic Redundancy Check)	--	Not applicable to E1.
Frame Format	Double Frame; MultiFrame (with CRC4); MultiFrame (w/CRC4, modified)	Frame Format of TalkAnytime should match that used by PBX or telco.
CAS Protocol	E&M Immed Strt E&M Wink Start E&M Wink with dial tone FXO Ground Strt FXO Loop Start FXS Ground Strt FXS Loop Start MFR2ITU MFR2 China MFR2 ANI	Channel Associated Signaling (CAS) is a method of incorporating telephony signaling info into an E1 voice/data stream. In CAS, the signaling bits (the A, B, C, and D bits) are multiplexed into the signal stream of each E1 channel. (By contrast, in Common Channel Signaling (CCS), one channel handles signaling for all other channels.) Each CAS protocol defines the states of the signaling bits during the various stages of a call (IDLE, SEIZED, ANSWER, RING-ON, RING-OFF). The CAS protocol code allows the VOIP to interact properly with the PBX or central-office switch that it serves. The need to download CAS protocols arises for only a small minority of VOIP users, and only when PBX/switch is found to be incompatible with standard protocols. Match this parameter to the setting of PBX or central-office switch.
FXS Options – No Response Timer	1 – 65535 (in seconds)	Length of time before call connection attempt is abandoned. Applicable only when FXS Loop Start or FXS Ground Start is selected as the CAS protocol.



The values in the table below apply to both the FXS Ground Start CAS protocol and the FXS Loop Start CAS protocol.

E1 Parameter Definitions		
Field Name	**Values**	**Description**
FXS Ground/Loop Start Supervision Parameters		
Answer Delay (Enable)	Y/N	When this option is selected, the FXS interface sends the connection notice to the calling party only when the Answer Delay Timer expires. The connection notice is sent regardless of whether or not the called extension has gone offhook.
Answer Delay Timer	numeric (in seconds)	When Answer Delay is enabled, this value determines when the FXS interface sends the connection notice.

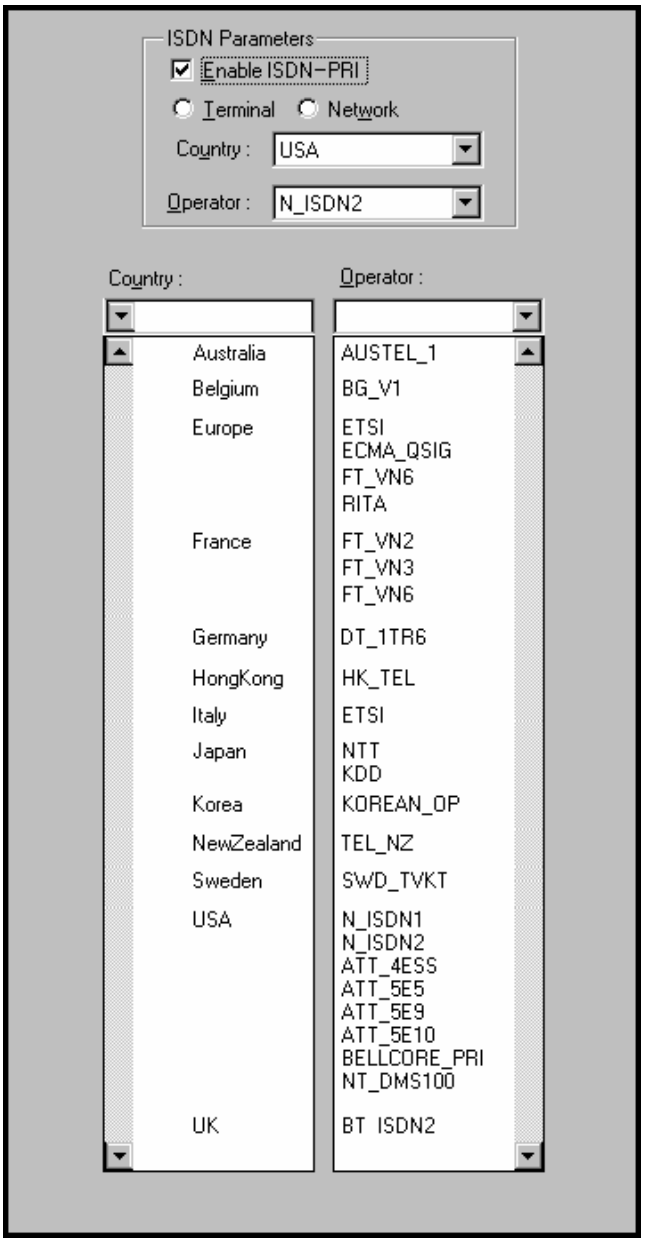
E1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
FXS Ground/Loop Start Supervision Parameters		
Tone Detection (Enable)	Y/N	After a specified tone (chosen from the Available Tones list) coming from the PBX is stopped, the FXS interface will send the 'connect' signal to the calling party.
Available Tones (List)	Busy Tone, Dial Tone, Reorder Tone Survivability Dial Tone, Unobtainable Tone	List from which tones can be chosen to signal call answer.
Answer Tones (List)	Busy Tone, Dial Tone, Reorder Tone Survivability Dial Tone, Unobtainable Tone	Currently chosen call-answer supervision tone.
ISDN Parameters		
Field Name	**Values**	**Description**
Enable ISDN-PRI	Y/N	If digital connection is ISDN-PRI type, this box should be checked. When ISDN is enabled, the "CAS Protocols" field is grayed out (ISDN has its own signaling method).
Terminal/ Network	either "Terminal" or "Network"	When "Terminal" is selected, it indicates that the TalkAnytime should emulate the subscriber (terminal) side of the digital connection. When "Network" is selected, it indicates that the TalkAnytime should emulate the central office (network) side of the digital connection. Setting used for TalkAnytime must be opposite to the setting used in the PBX. For example, if the PBX is set to "Terminal," then the TalkAnytime must be set to "Network."

E1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
ISDN Parameters		
Country	see table, later this chapter	Country in which TalkAnytime is operating with ISDN.
Operator	see table, later this chapter	Indicates phone switch manufacturer/model or refers to telco so as to specify the switching system in question. ISDN is implemented somewhat differently in different switches.
Note on Country & Operator options.	__	[ISDN implementation options are shown, arranged by country, in a table below – soon after E1 Parameter Definitions.]
Numbering Details Parameters		
Calling Party Number Type	unknown, national, international, network specific, subscriber, abbreviated, as received from network	Calling party type is part of calling party Number Information element that is sent on ISDN line. The Calling party number information element identifies the origin of a call.
Called Party Number Type	unknown, national, international, network specific, subscriber, abbreviated, as received from network	Called Party Number Type and Called Party Number Plan are part of Calling Party Number Information element that is sent on ISDN line. The Called party number information element identifies destination of a call.
Called Party Number Plan	unknown, ISDN telephony, data, telex, national standard, private, as received from network	The call dialing plan under which the called party operates.

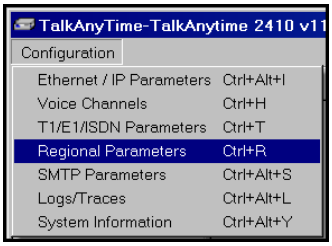
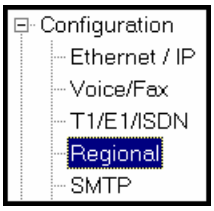
E1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
General E1/E1/ISDN Parameters		
Line Build Out	0 dB, -7.5 dB, -15 dB, -22.5 dB	To reduce the crosstalk on received signals, a transmit attenuator can be placed in the data path. Transmit attenuation is selectable. **Default: O dB**
Pulse Shape Level	0 to 40 Meters 40 to 81 m 81 to 122 m 122 to 162 m 162 to 200 m	Refers to length of cable between TalkAnytime and PBX/telco in meters. Most common will be 0 to 40m.
Caller ID Parameters		*Not supported for TalkAnytime.*
Caller ID Enable	Y/N	Turns Caller ID feature on (if checked) and off (if unchecked).
Calling Number Prefix (Caller ID)	0-9, *, #	A DTMF symbol used to mark the beginning of the calling party number for use with Caller ID. Maximum length: 4 characters.
Calling Number Suffix (Caller ID)	0-9, *, #	A DTMF symbol used to mark the end of the calling party number for use with Caller ID. Maximum length: 4 characters.
Flash Hook Parameters		*Not supported for TalkAnytime.*
Detect Flash Hook	Y/N	This setting determines whether or not the MultiVOIP responds to hook-flash signals.
Detection Time	100 – 1500 milliseconds	Minimum hook-flash time that will be interpreted as a valid flash by the MultiVOIP.
Generation Time	100 – 1500 milliseconds	In some systems, a MultiVOIP might receive a hook-flash signal from an upstream device (a PBX, voip or other device) and must replicate it to a downstream device. This parameter determines the duration of the hook-flash signal that is passed to a downstream device.
Clocking	External/Internal	Set opposite to telco/PBX setting. Example: if telco clocking internal, set VOIP clocking as external.

E1 Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
Line Coding	AMI / B8ZS	Match to PBX or telco.
PCM Law	A-Law/Mu-Law	Match to PBX or telco. " Mu-law" is analog-to-digital compression/expansion standard used in North America. "A-law" is European standard.
Yellow Alarm Format	Bit 2 / 1111…	Depending on the Frame Format used, there are choices of Yellow Alarm format, as follows: **D4**: **-Bit2** = 0 in every speech channel **-FS** bit of frame 12 is forced to one. **ESF**: **-Bit2** = 0 in every speech channel **–1111111100000000** pattern in data link channel. Check with your PBX/telco administrator for the correct setting or use the default value (1111 …).

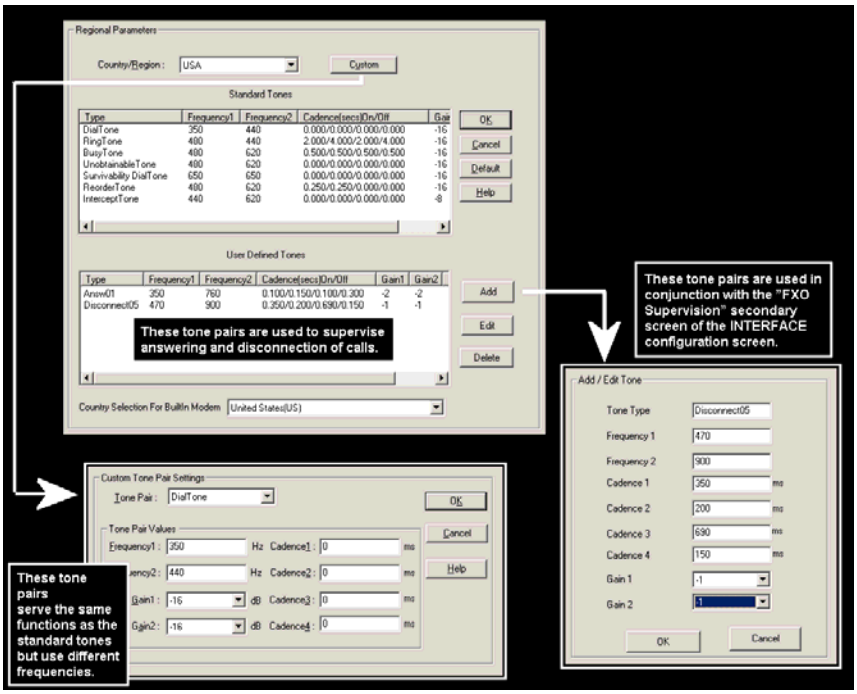
10. **Set ISDN Parameters** (if applicable). These parameters are accessible in the **T1/E1/ISDN Parameters** screen. If your T1 or E1 phone line is a Primary Rate Interface ISDN line, enable ISDN-PRI and set it for the particular implementation of ISDN that your telco uses. The ISDN types supported by the digital TalkAnytime units (at press time) are listed below, organized by country.



11. **Set Regional Parameters** (Phone Signaling Tones & Cadences)**.**
This dialog box can be reached by pulldown menu, keyboard shortcut, or sidebar.

Accessing "Regional Parameters"	
Pulldown	**Icon**
	
Shortcut	**Sidebar**
Ctrl + R	

The **Regional Parameters** screen will appear. For the country selected, the standard set of frequency pairs will be listed for dial tone, busy tone, 'unobtainable' tone (fast busy or trunk busy), ring tone, and other, more specialized tones.



Remote Configuration/Command Modem. Each TA2410 and TA3010 TalkAnytime unit contains a built-in modem. This modem allows the TalkAnytime unit to be configured remotely when a standard POTS line is connected to the "Command Modem" connector on the back panel of the TalkAnytime unit. In the

Country Selection for Built-In Modem field (drop-down list), select the country that best fits your situation. This may not be the same as your selection for the **Country/Region** field. The selections in the **Country Selection for Built-In Modem** field entail more detailed groupings of telephony parameters than do the **Country/Region** values.

In each field, enter the values that fit your particular system.

The **Regional Parameters** fields are described in the table below.

"Regional Parameter" Definitions		
Field Name	**Values**	**Description**
Country/ Region	USA, Japan, UK, Custom	Name of a country or region that uses a certain set of tone pairs for **dial tone, ring tone, busy tone, unobtainable tone** (fast busy tone), **survivability tone** (tone heard briefly, 2 seconds, after going offhook denoting survivable mode of VOIP/TalkAnytime unit), **re-order tone** (a tone pattern indicating the need for the user to hang up the phone), and **intercept tone** (a tone that warns an a party that has gone off hook but has not begun dialing, within a prescribed time, that an automatic emergency or attendant number will be called; the automatic call can be used to direct an attendant's attention to a disabled or distressed caller, allowing an appropriate response to be made). In some cases, the tone-pair scheme denoted by a country name may also be used outside of that country. The "Custom" option (button) assures that any tone-pairing scheme worldwide can be accommodated. **Note**: **Intercept tone** is applicable only when the FXS telephony interface has been chosen in the **Interface** screen and when the AutoCall / OffHook Alert field is set to OffHook Alert in the **Voice/Fax Parameters** screen. The time allowed for dialing before the automatic calling process begins is set in the Offhook Alert Timer field of the **Voice/Fax Parameters** screen.

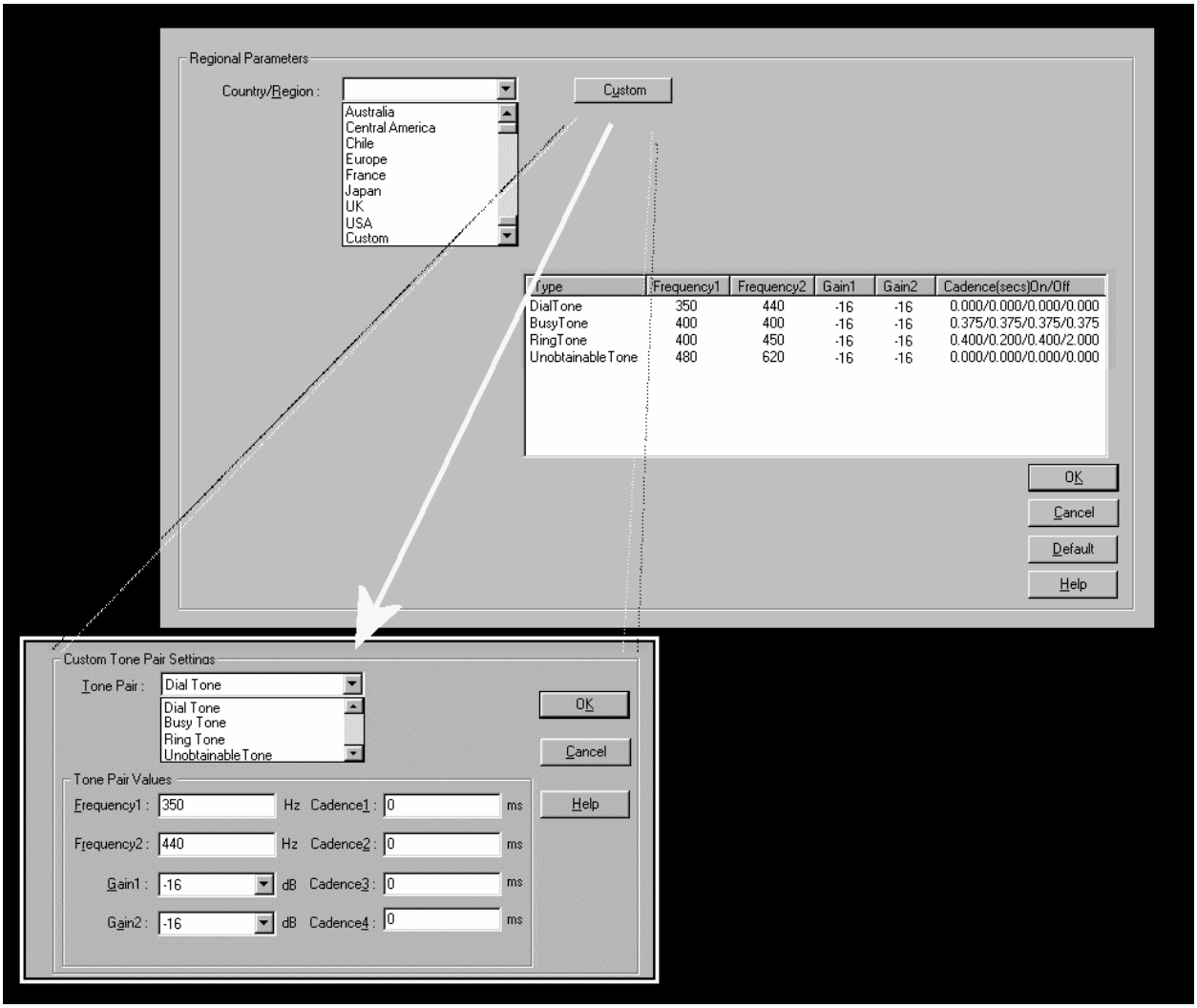
<table>
<tr><th colspan="3">“Regional Parameter” Definitions</th></tr>
<tr><th>Field Name</th><th>Values</th><th>Description</th></tr>
<tr><td>Country/ Region</td><td>USA, Japan, UK, Custom
Note: “Survivability” tone indicates a special type of call-routing redundancy & applies to MultiVantage voip units only.</td><td>Name of a country or region that uses a certain set of tone pairs for dial tone, ring tone, busy tone, and ‘unobtainable’ tone (fast busy tone), survivability tone (tone heard briefly, 2 seconds, after going offhook denoting survivable mode of voip unit) and re-order tone (a tone pattern indicating the need for the user to hang up the phone). In some cases, the tone-pair scheme denoted by a country name may also be used outside of that country. The “Custom” option (button) assures that any tone-pairing scheme worldwide can be accommodated.</td></tr>
<tr><td>Advisory screen</td><td colspan="2">

This message screen appears whenever the Country field is changed. It informs the operator that, upon change of the Country field value, all User Defined Tones will be deleted.</td></tr>
<tr><td colspan="2">Standard Tones fields</td><td></td></tr>
<tr><td>Type column</td><td>dial tone,
ring tone,
busy tone,
unobtainable tone (fast busy),
survivability tone,
re-order tone</td><td>Type of telephony tone-pair for which frequency, gain, and cadence are being presented.</td></tr>
<tr><td>Frequency 1</td><td>freq. in Hertz</td><td>Lower frequency of pair.</td></tr>
<tr><td>Frequency 2</td><td>freq. in Hertz</td><td>Higher frequency of pair.</td></tr>
</table>

"Regional Parameter" Definitions (cont'd)		
Field Name	**Values**	**Description**
Standard Tones fields (cont'd)		
Gain 1	gain in dB +3dB to –31dB and "mute" setting	Amplification factor of lower frequency of pair. This applies to the dial, ring, busy and 'unobtainable' tones that the TalkAnytime unit outputs as audio to the FXS, FXO, or E&M port. **Default: -16dB**
Gain 2	gain in dB +3dB to –31dB and "mute" setting	Amplification factor of higher frequency of pair. This applies to the dial, ring, busy, and 'unobtainable' (fast busy) tones that the TalkAnytime unit outputs as audio to the FXS, FXO, or E&M port. **Default: -16dB**
Cadence (msec) On/Off	n/n/n/n four integer time values in milli-seconds; zero value for dial-tone indicates continuous tone	On/off pattern of tone durations used to denote phone ringing, phone busy, connection unobtainable (fast busy), dial tone ("0" indicates continuous tone), survivability, and re-order. Default values differ for different countries/regions. Although most cadences have only two parts (an "on" duration and an "off" duration), some telephony cadences have four parts. Most cadences, then, are expressed as two iterations of a two-part sequence. Although this is redundant, it is necessary to allow for expression of 4-part cadences.
Custom (button)	--	Click on the "Custom" button to bring up the **Custom Tone Pair Settings** screen. (The "Custom" button is active only when "Custom" is selected in the **Country/Region** field.) This screen allows the user to specify tone pair attributes that are not found in any of the standard national/regional telephony toning schemes.

"Regional Parameter" Definitions (cont'd)		
Field Name	**Values**	**Description**
Country Selection for Built-In Modem	country name	TalkAnytime units include a built-in modem. The administrator can dial into this modem to configure the TalkAnytime unit remotely. The country name values in this field set telephony parameters that allow the modem to work in the listed country. This value may be different than the Country/Region value. For example, a user may need to choose "Europe" as the Country/Region value but "Denmark" as the Country-Selection-for-Built-In-Modem value.
User Defined Tones fields		
Type column	alphanumeric name specified by user	Name of supervisory tone pair. Cannot be same as name of any standard tone pair.
Frequency 1	freq. in Hertz	Lower frequency of pair.
Frequency 2	freq. in Hertz	Higher frequency of pair.
Gain 1	gain in dB +3dB to –31dB and "mute" setting	Amplification factor of lower frequency of pair. This applies to any supervisory tones that the TalkAnytime unit outputs as audio to the FXS, FXS, or E&M port. **Default: -16dB**
Gain 2	gain in dB +3dB to –31dB and "mute" setting	Amplification factor of higher frequency of pair. This applies to any supervisory tones that the TalkAnytime unit outputs as audio to the FXS, FXO, or E&M port. **Default: -16dB**
Cadence (msec) On/Off	n/n/n/n four integer time values in milli-seconds; zero value for dial-tone indicates continuous tone	On/off pattern of tone durations used to denote supervisory tones specified by user. Supervisory tones relate to answering and disconnection of calls. Although most cadences have only two parts (an "on" duration and an "off" duration), some telephony cadences have four parts. Most cadences, then, are expressed as two iterations of a two-part sequence. Although this is redundant, it is necessary to allow for expression of 4-part cadences.

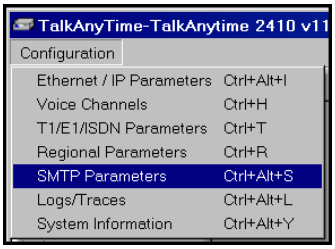
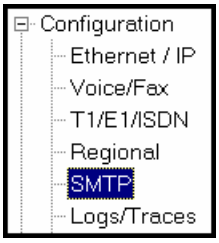
11. **Set Custom Tones and Cadences** (optional). The **Regional Parameters** dialog box has a secondary dialog box that allows you to customize DTMF tone pairs to create unique ring-tones, dial-tones, busy-tones or "unobtainable" tones (fast busy signal) or "re-order" tones (telling the user that she must hang up an off-hook phone) or "survivability" tones (an indication of call-routing redundancy) for your system. This screen allows the user to specify tone-pair attributes that are not found in any of the standard national/regional telephony toning schemes. To access this customization feature, click on the **Custom** button on the **Regional Parameters** screen. (The "Custom" button is active only when "Custom" is selected in the **Country/Region** field.)



The **Custom Tone-Pair Settings** fields are described in the table below.

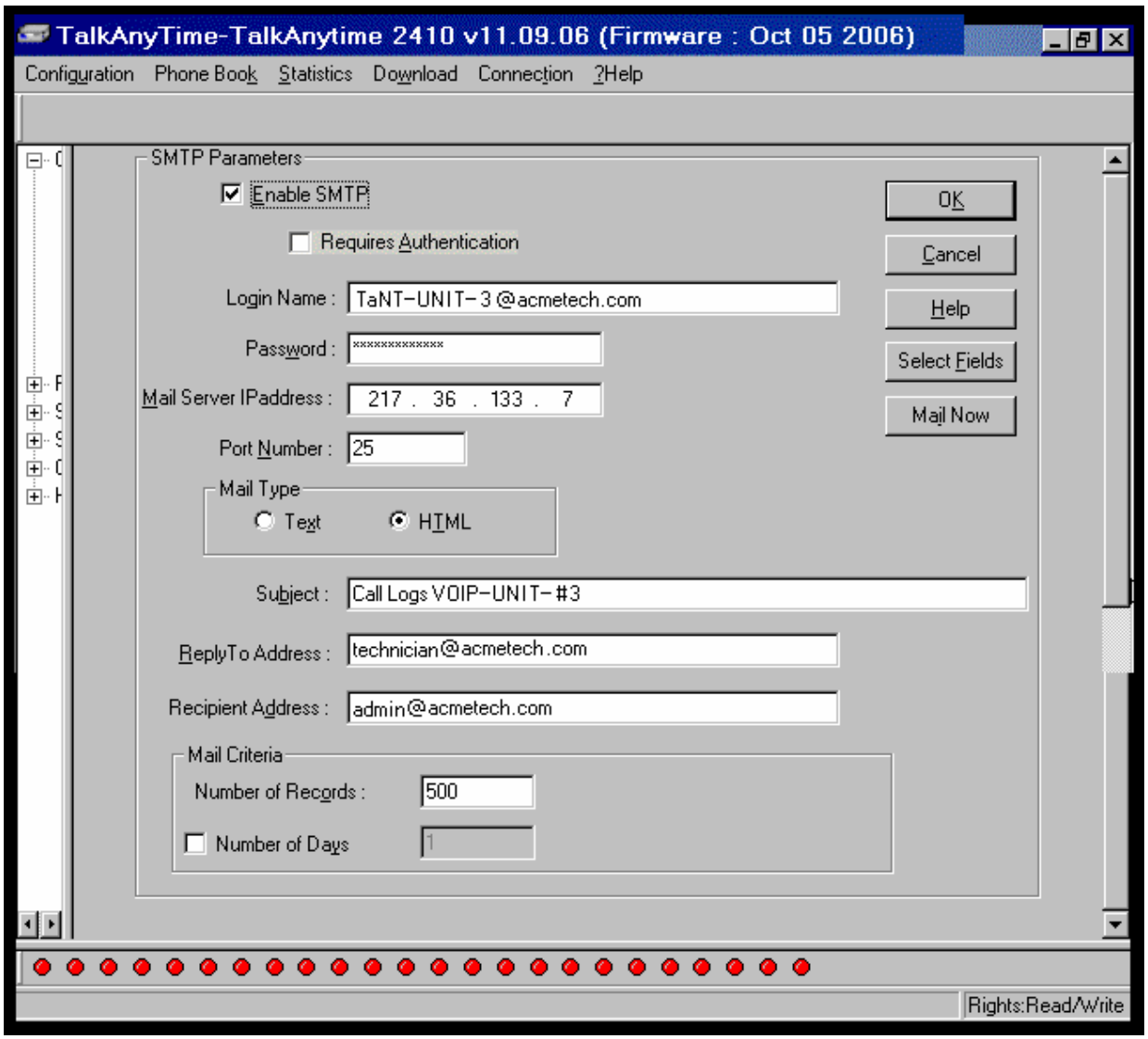
Custom Tone-Pair Settings Definitions		
Field Name	**Values**	**Description**
Tone Pair	dial tone, busy tone, ring tone, 'unobtainable' tone, survivability tone, re-order tone	Identifies the type of telephony signaling tone for which frequencies are being specified.
TONE PAIR VALUES		**About Defaults**: US telephony values are used as defaults on this screen. However, since this dialog box is provided to allow custom tone-pair settings, default values are essentially irrelevant.
Frequency 1	frequency in Hertz	Frequency of lower tone of pair. This outbound tone pair enters the TalkAnytime unit at the input port.
Frequency 2	frequency in Hertz	Frequency of higher tone of pair. This outbound tone pair enters the TalkAnytime unit at the input port.
Gain 1	gain in dB +3dB to –31dB and "mute" setting	Amplification factor of lower frequency of pair. This figure describes amplification that the TalkAnytime unit applies to outbound tones entering the TalkAnytime unit at the input port. **Default = -16dB**
Gain 2	gain in dB +3dB to –31dB and "mute" setting	Amplification factor of higher frequency of pair. This figure describes amplification that the TalkAnytime unit applies to outbound tones entering the TalkAnytime unit at the input port. **Default = -16dB**
Cadence 1	integer time value in milli-seconds; zero value for dial-tone indicates continuous tone	On/off pattern of tone durations used to denote phone ringing, phone busy, dial tone ("0" indicates continuous tone) survivability and re-order. Cadence 1 is duration of first period of tone being "on" in the cadence of the telephony signal (which could be ring-tone, busy-tone, unobtainable-tone, or dial tone).
Cadence 2	duration in milliseconds	Cadence 2 is duration of first "off" period in signaling cadence.
Cadence 3	duration in milliseconds	Cadence 3 is duration of second "on" period in signaling cadence.
Cadence 4	duration in milliseconds	Cadence 4 is duration of second "off" period in the signaling cadence, after which the 4-part cadence pattern of the telephony signal repeats.

12. **Set SMTP Parameters** (Log Reports by Email). The **SMTP Parameters** screen is applicable when the administrator has chosen to receive log reports by email (this is done by selecting the "SMTP" checkbox in the **Others** screen and selecting "Enable SMTP" in the **SMTP Parameters** screen.). The **SMTP Parameters** screen can be reached by pulldown menu, keyboard shortcut, or sidebar.

<table>
<tr><th colspan="2">Accessing "SMTP Parameters"</th></tr>
<tr><th>Pulldown</th><th>Icon</th></tr>
<tr><td> 
</td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><th>Shortcut</th><th>Sidebar</th></tr>
<tr><td>Ctrl + Alt + S</td><td> 
</td></tr>
</table>

TalkAnytime unit as Email Sender. When SMTP is used, the TalkAnytime unit will actually be given its own email account (with Login Name and Password) on some mail server connected to the IP network. Using this account, the TalkAnytime unit will then send out email messages containing log report information. The "Recipient" of the log report email is ordinarily the Administrator. Because the TalkAnytime unit cannot receive email, a "Reply-To" address must also be set up. Ordinarily, the "Reply-To" address is that of a technician who has access to the mail server or TalkAnytime unit or both, and the VoIP administrator might also be designated as the "Reply-To" party. The main function of the Reply-To address is to receive error or failure messages regarding the emailed reports.

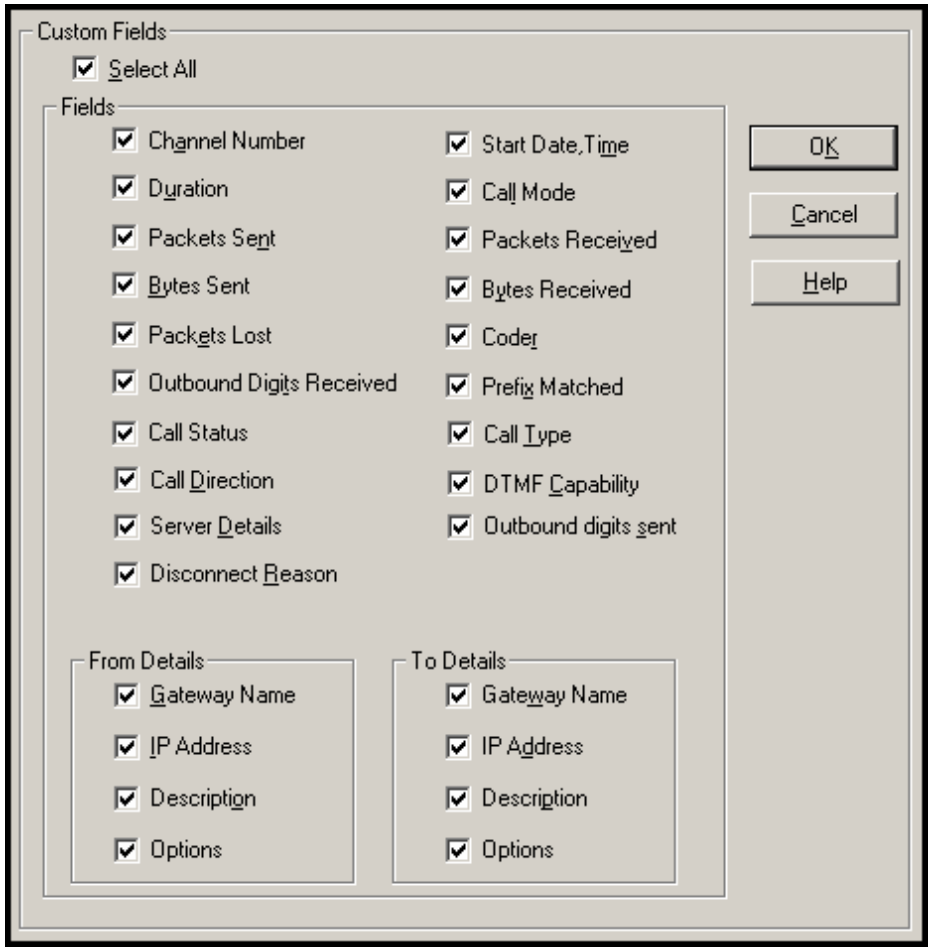
The **SMTP Parameters** screen is shown below



"SMTP Parameters" Definitions		
Field Name	**Values**	**Description**
Enable SMTP	Y/N	In order to send log reports by email, this box must be checked. However, to enable SMTP functionality, you must also select "SMTP" in the **Logs** screen.
Requires Authentication	Y/N	If this checkbox is checked, the TalkAnytime unit will send Authentication information to the SMTP server. The authentication information indicates whether or not the email sender has permission to use the SMTP server.
Login Name	alpha-numeric, per email domain	This is the User Name for the TalkAnytime unit's email account.

"SMTP Parameters" Definitions (cont'd)		
Field Name	**Values**	**Description**
Password	alpha-numeric	Login password for TalkAnytime unit's email account.
Mail Server IP Address	n.n.n.n for n= 0 to 255	This is the mail server's IP address. This mail server must be accessible on the IP network to which the TalkAnytime unit is connected.
Port Number	25	25 is a standard port number for SMTP.
Mail Type	text or html	Mail type in which log reports will be sent.
Subject	text	User specified. Subject line that will appear for all emailed log reports for this TalkAnytime unit.
Reply-To Address	email address	User specified. This email address functions as a source email identifier for the TalkAnytime unit, which, of course, cannot usefully receive email messages. The Reply-To address provides a destination for returned messages indicating the status of messages sent by the TalkAnytime unit (esp. to indicate when log report email was undeliverable or when an error has occurred).
Recipient Address	email address	User specified. Email address at which VOIP (TalkAnytime) administrator will receive log reports.
Mail Criteria		Criteria for sending log summary by email. The log summary email will be sent out either when the user-specified number of log messages has accumulated, or once every day or multiple days, *which ever comes first*.
Number of Records	integer	This is the number of log records that must accumulate to trigger the sending of a log-summary email.
Number of Days	integer	This is the number of days that must pass before triggering the sending of a log-summary email.

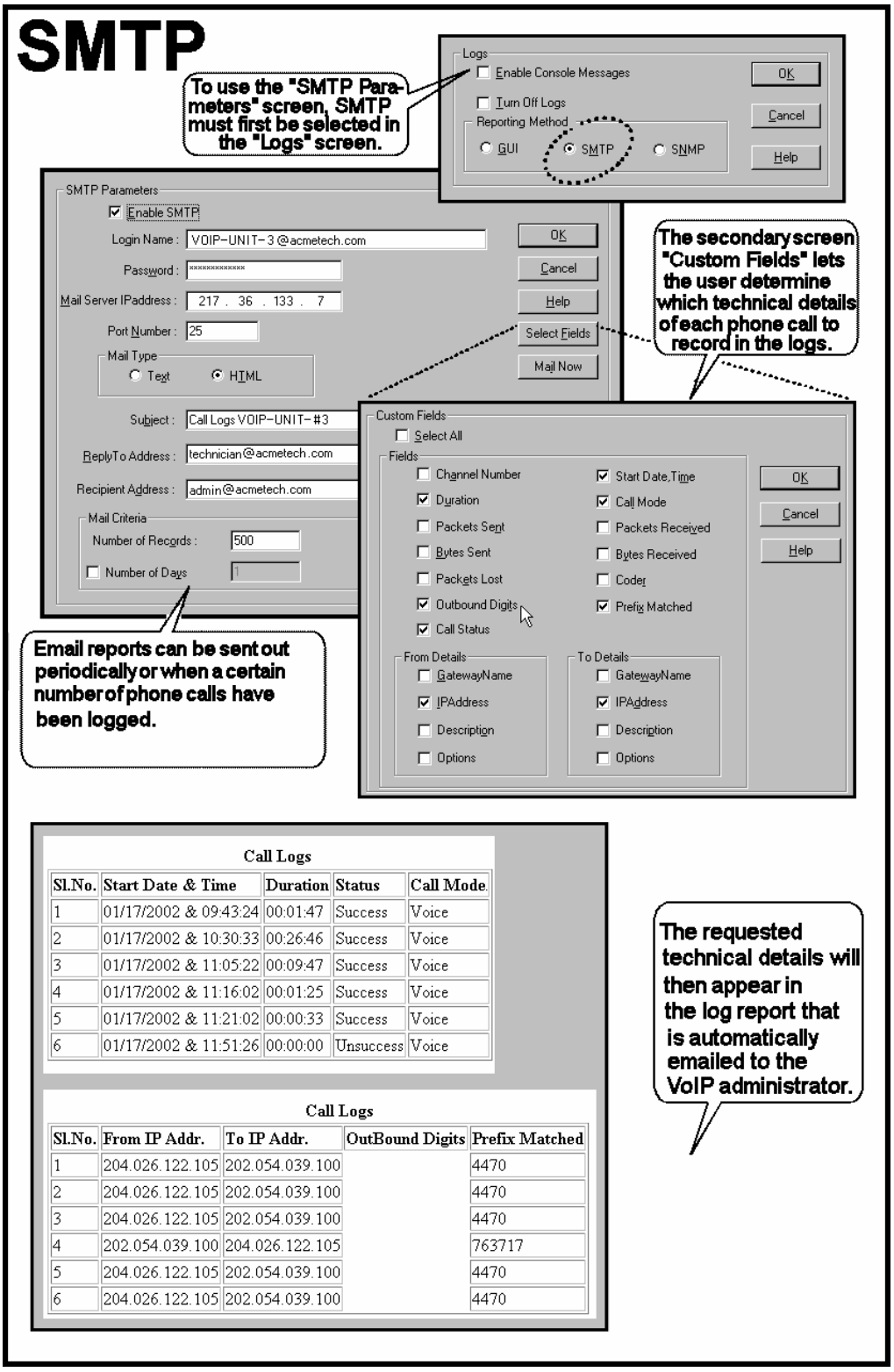
The **SMTP Parameters** dialog box has a secondary dialog box, **Custom Fields**, that allows you to customize email log messages for the TalkAnytime unit. The TalkAnytime software logs data about many aspects of the call traffic going through the TalkAnytime unit. The Custom Fields screen lets you pick which aspects will be included in the email log reports.



"Custom Fields" Definitions			
Field	**Description**	**Field**	**Description**
Select All	Log report to include all fields shown.		
Channel Number	Data channel carrying call.	Start Date, Time	Date and time the phone call began.
Duration	Length of call.	Call Mode	Voice or fax.
Packets Sent	Total packets sent in call.	Packets Received	Total packets received in call.

"Custom Fields" Definitions (cont'd)			
Field	**Description**	**Field**	**Description**
Bytes Sent	Total bytes sent in call.	Bytes Received	Total bytes received in call.
Packets Lost	Packets lost in call.	Coder	Voice Coder /Compression Rate used for call will be listed in log.
Outbound Digits Received	The DTMF dialing digits received by this gateway from the remote gateway presuming that DTMF is set to "Out of Band."	Prefix Matched	When selected, the phonebook prefix matched in processing the call will be listed in log.
Call Status	Successful or unsuccessful.	Call Type	Indicates the Call Signaling protocol used for the call (H.323, SIP, or SPP apply to MultiVOIP units; TalkAnytime uses a proprietary protocol).
Call Direction	Indicates call's originating party.	DTMF Capability	Indicates whether the DTMF dialing digits are carried "Inband" or "Out of Band." The corresponding field values differ for the 3 different voip protocols. For H.323, this field can display "Out of Band" or "Inband". For SIP it can display either "Out of Band RFC2833" or "Out of Band SIP INFO" to indicate the out-of-band condition or "Inband" to indicate the in-band condition. For SPP it can display "Out of Band RFC2833" or "Inband".
Server Details	The IP address of the traffic control server (if any) being used (whether an H.323 gatekeeper, a SIP proxy, or an SPP registrar gateway) will be displayed here if the call is handled through that server.	Outbound Digits Sent	The dialing digits sent by this gateway to the remote gateway presuming that DTMF is set to "Out of Band."
Disconnect Reason	Indicates whether the call was disconnected simply because the desired conversation was done or some other irregular cause occasioned disconnection (e.g., a technical error or failure). Values are "Normal" and "Local" disconnection.		

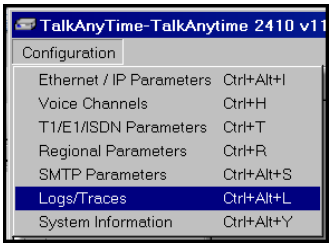
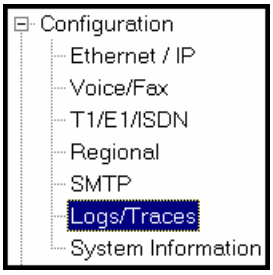
"Custom Fields" Definitions (cont'd)			
Field	**Description**	**Field**	**Description**
From Details		**To Details**	
Gateway Number	Originating gateway	Gatew N.	Completing or answering gateway
IP Addr	IP address where call originated.	IP Addr	IP address where call was completed or answered.
Descript	Identifier of site where call originated.	Descript	Identifier of site where call was completed or answered.
Options	When selected, log will not Silence Compression and Forward Error Correction by call originator.	Options	When selected, log will not use Silence Compression and Forward Error Correction by party answering call.


SMTP
To use the "SMTP Parameters" screen, SMTP must first be selected in the "Logs" screen.
Logs
Enable Console Messages
Turn Off Logs
Reporting Method
GUI
SMTP
SNMP
OK
Cancel
Help
SMTP Parameters
Enable SMTP
Login Name : VOIP-UNIT-3@acmetech.com
Password :
Mail Server IPaddress : 217 . 36 . 133 . 7
Port Number : 25
Mail Type
Text
HTML
Subject : Call Logs VOIP-UNIT-#3
ReplyTo Address : technician@acmetech.com
Recipient Address : admin@acmetech.com
Mail Criteria
Number of Records : 500
Number of Days 1
Select Fields
Mail Now
The secondary screen "Custom Fields" lets the user determine which technical details of each phone call to record in the logs.
Custom Fields
Select All
Fields
Channel Number
Duration
Packets Sent
Bytes Sent
Packets Lost
Outbound Digits
Call Status
Start Date,Time
Call Mode
Packets Received
Bytes Received
Codec
Prefix Matched
From Details
GatewayName
IPAddress
Description
Options
To Details
GatewayName
IPAddress
Description
Options
Email reports can be sent out periodically or when a certain number of phone calls have been logged.
Call Logs
Sl.No. Start Date & Time Duration Status Call Mode
1 01/17/2002 & 09:43:24 00:01:47 Success Voice
2 01/17/2002 & 10:30:33 00:26:46 Success Voice
3 01/17/2002 & 11:05:22 00:09:47 Success Voice
4 01/17/2002 & 11:16:02 00:01:25 Success Voice
5 01/17/2002 & 11:21:02 00:00:33 Success Voice
6 01/17/2002 & 11:51:26 00:00:00 Unsuccess Voice
Call Logs
Sl.No. From IP Addr. To IP Addr. OutBound Digits Prefix Matched
1 204.026.122.105 202.054.039.100 4470
2 204.026.122.105 202.054.039.100 4470
3 204.026.122.105 202.054.039.100 4470
4 202.054.039.100 204.026.122.105 763717
5 204.026.122.105 202.054.039.100 4470
6 204.026.122.105 202.054.039.100 4470
The requested technical details will then appear in the log report that is automatically emailed to the VoIP administrator.

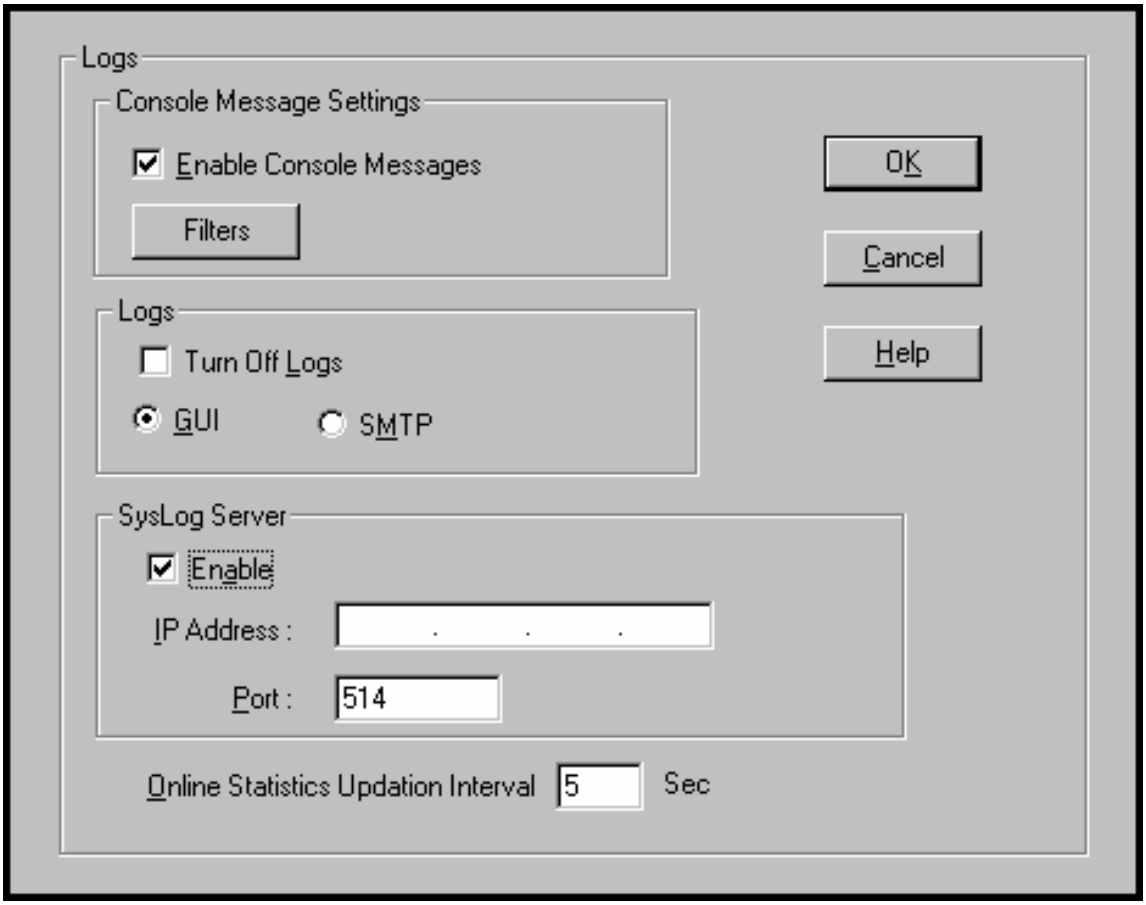
13. **Set Log Reporting Method**. The **Logs** screen lets you choose how the Administrator (or webmaster) will receive log reports about the TalkAnytime unit's performance and the phone call traffic that is passing through it. Log reports can be received in one of two ways:

    A. in the TalkAnytime program (GUI), or

    B. via email (SMTP).

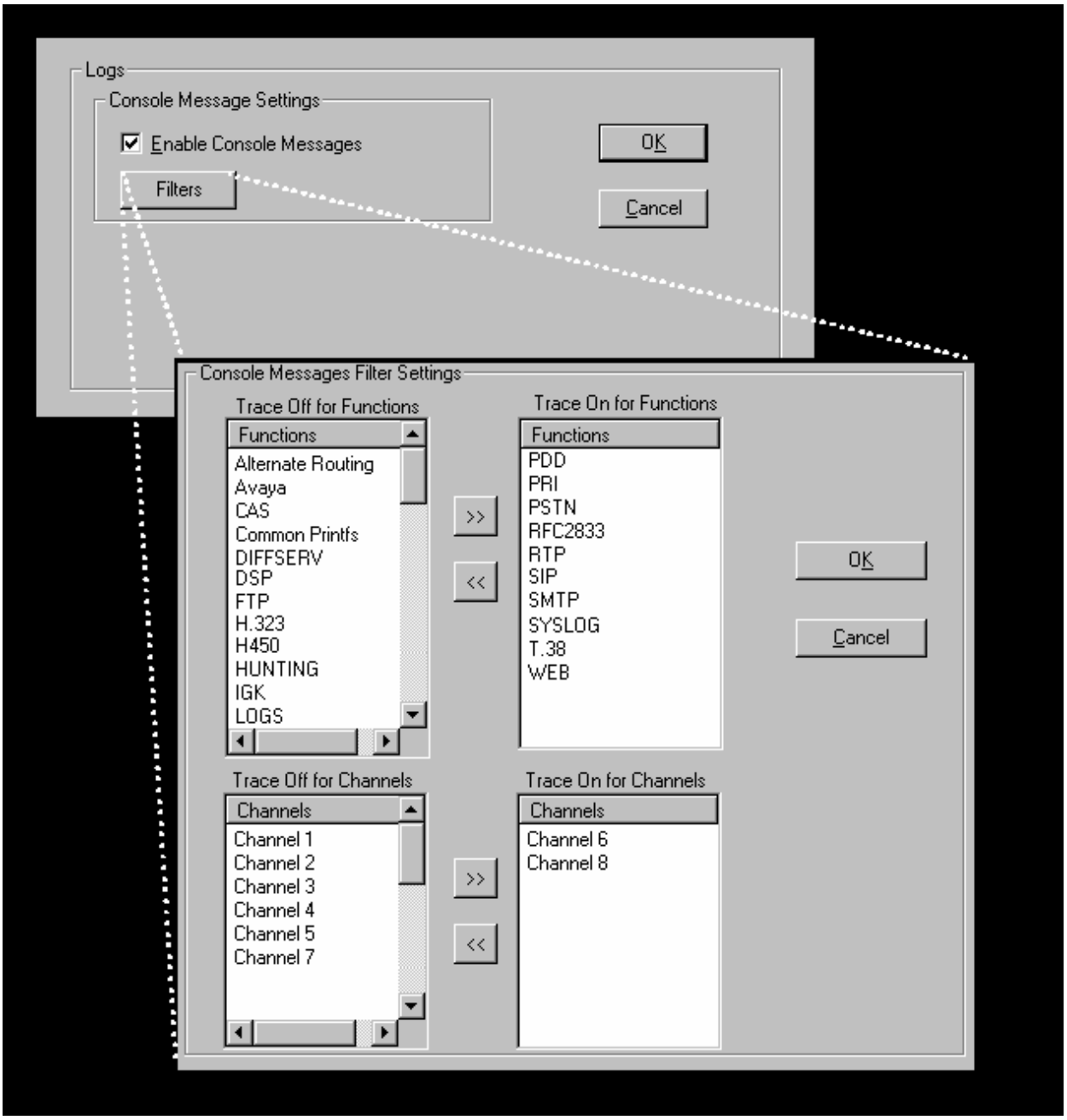
Accessing "Logs/Traces" Screen	
Pulldown	**Icon**
	
Shortcut	**Sidebar**
Ctrl + Alt + L	

If you enable console messages, you can customize the types of messages to be included/excluded in log reports by clicking on the "Filters" button and using the **Console Messages Filter Settings** screen (see subsequent page). If you use the logging function, select the logging option that applies to your VoIP system design. If you intend to use a SysLog Server program for logging, click in that Enable check box. The common SysLog logical port number is 514. If you intend to use the TalkAnytime web browser GUI for configuration and control of TalkAnytime units, be aware that the web browser GUI does not support logs directly. However, when the web browser GUI is used, log files can still be sent to the voip administrator via email (which requires activating the SMTP logging option in this screen).

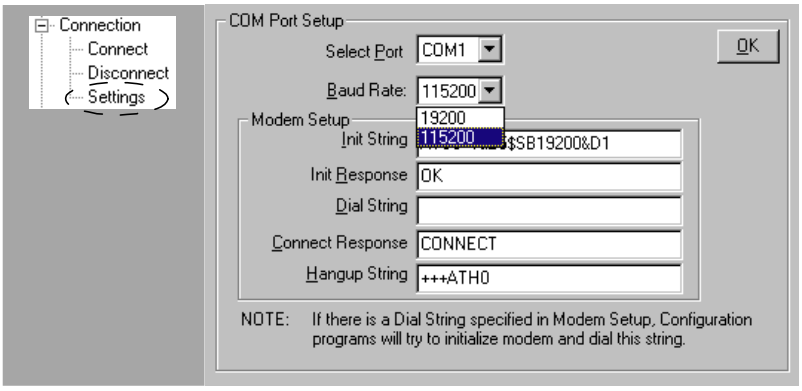


"Logs" Screen Definitions		
Field Name	**Values**	**Description**
Enable Console Messages	Y/N	Allows TalkAnytime debugging messages to be read via a basic terminal program like HyperTerminal ™ or equivalent. Normally, this should be disabled because it uses TalkAnytime processing resources. Console messages are meant for tech support personnel.
Filters (button)		Click to access secondary screen on where console messages can be included/excluded by category and on a per-channel basis. (See the Console Messages Filter Settings screen on subsequent page.)
Turn Off Logs	Y/N	Check to disable log-reporting function.
Logs Buttons		Only one of two log reporting methods, GUI or SMTP, may be chosen.
GUI	Y/N	User must view logs at the TalkAnytime configuration program.
SMTP	Y/N	Log messages will be sent to user-specified email address.
SysLog Server Enable	Y/N	This box must be checked if logging is to be done in conjunction with a SysLog Server program. For more on SysLog Server, see *Operation & Maintenance* chapter.
IP Address	n.n.n.n for n= 0-255	IP address of computer, connected to TalkAnytime network, on which SysLog Server program is running.
Port	514	Logical port for SysLog Server. 514 is commonly used.
Online Statistics Updation Interval	integer	Set the interval (in seconds) at which logging information will be updated.

To customize console messages by category and/or by channel, click on "Filters" and use the **Console Messages Filters Settings** screen.



14. **Set Baud Rate**. The **Connection** option in the sidebar menu has a "Settings" item that includes the baud-rate setting for the COM port of the computer running the TalkAnytime software.

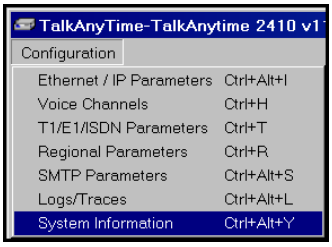
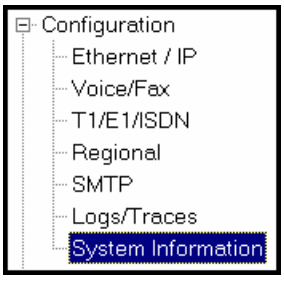


First, it is important to note that the default COM port established by the TalkAnytime program is COM1. ***Do not accept the default value until you have checked the COM port allocation on your PC***. To do this, check for COM port assignments in the system resource dialog box(es) of your Windows operating system. If COM1 is not available, you must change the COM port setting to COM2 or some other COM port that you have confirmed as being available on your PC.

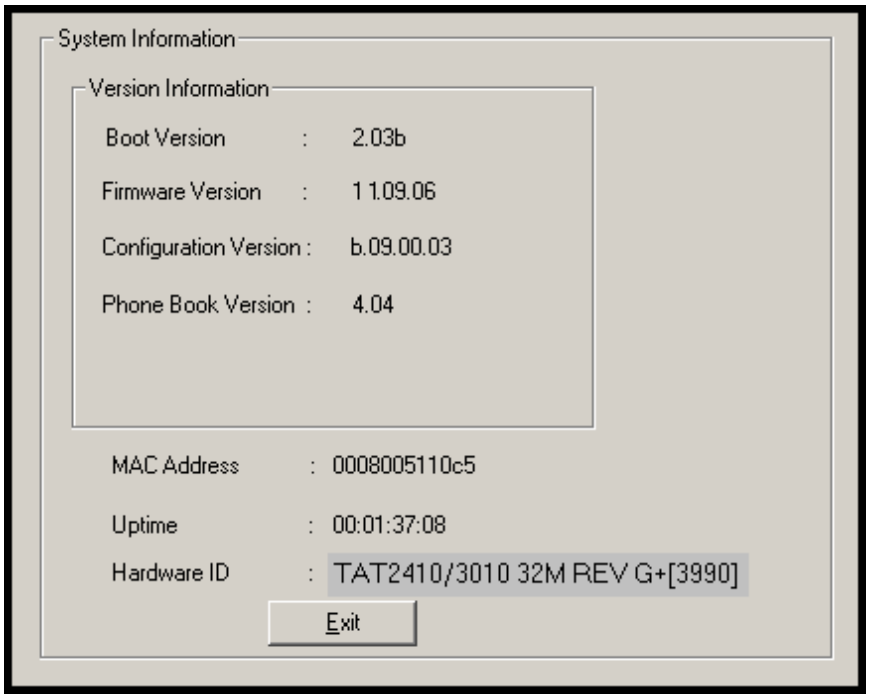
The default baud rate is 115,200 bps.

15. View **System Information** screen and set updating interval (optional).

This dialog box can be reached by pulldown menu, keyboard shortcut, or sidebar.

Accessing "System Information" Screen	
Pulldown	**Icon**
	
Shortcut	**Sidebar**
Ctrl + Alt +Y	

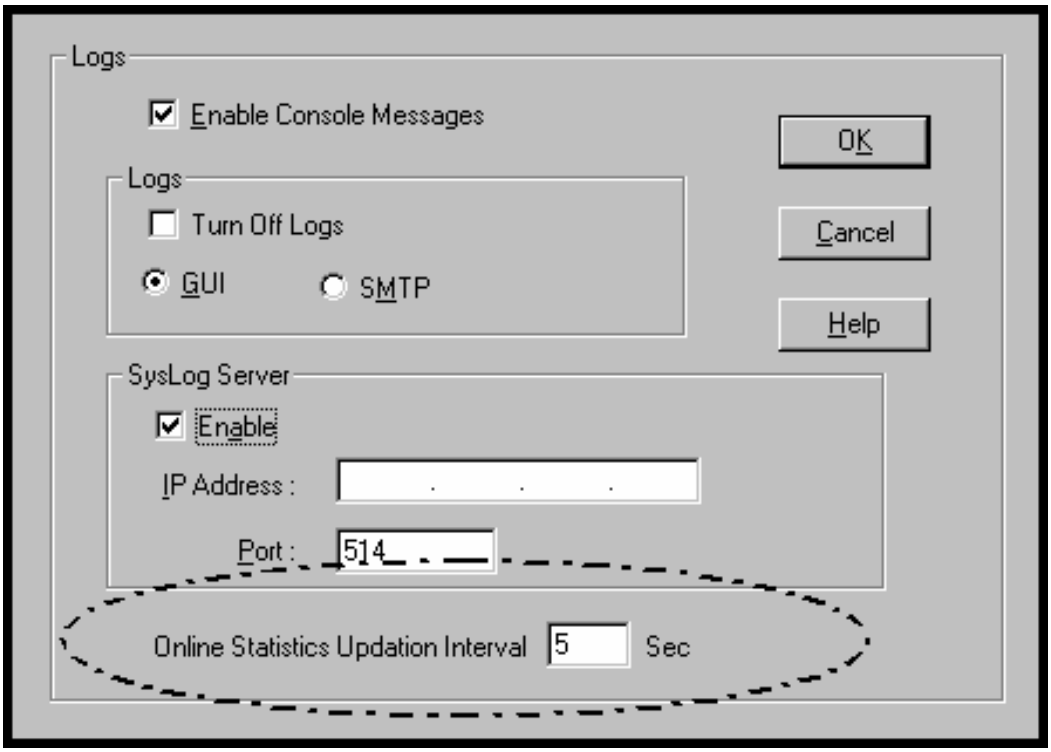
This screen presents vital system information at a glance. Its primary use is in troubleshooting.



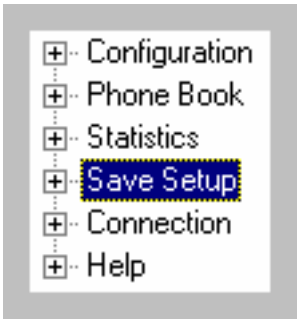
System Information Parameter Definitions		
Field Name	**Values**	**Description**
Boot Version	nn.nn	Indicates the version of the code that is used at the startup (booting) of the TalkAnytime. The boot code version is independent of the software version.
Firmware Version	alpha-numeric	Indicates version of TalkAnytime firmware.

System Information Parameter Definitions (cont'd)		
Field Name	**Values**	**Description**
Configur-ation Version	nn.nn.nn.nn alpha-numeric	Indicates version of TalkAnytime Configuration software (which includes screens for Ethernet/IP Parameters, SMTP Parameters, Regional Parameters, etc.).
Phone Book Version	numeric	Indicates the version of the inbound and outbound phonebook portion of the TalkAnytime software.
Mac Address	alpha-numeric	Denotes the number assigned as the TalkAnytime unit's unique Ethernet address.
Up Time	days: hours: mm:ss	Indicates how long the voip has been running since its last booting.
Hardware ID	alpha-numeric	Indicates the version of the TalkAnytime unit's circuit board and components.

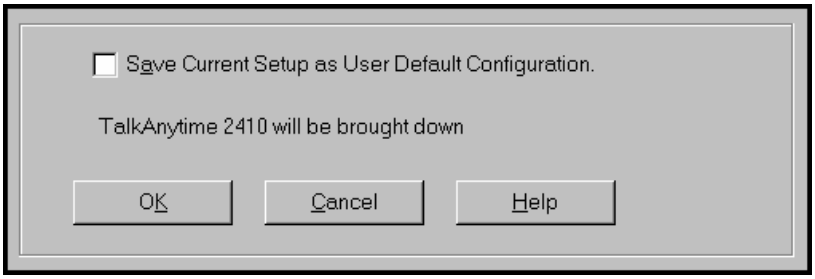
The frequency with which the **System Information** screen is updated is determined by a setting in the Logs screen.



16. **Saving the TalkAnytime Configuration**. When values have been set for all of the TalkAnytime unit's various operating parameters, click on **Save Setup** in the sidebar.



17. **Creating a User Default Configuration**. When a "Setup" (complete grouping of parameters) is being saved, you will be prompted about designating that setup as a "User Default" setup. A User Default setup may be useful as a baseline of site-specific values to which you can easily revert. Establishing a User Default Setup is optional.



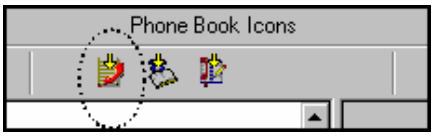
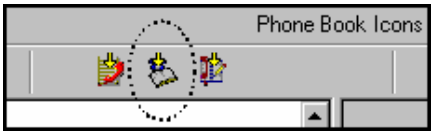
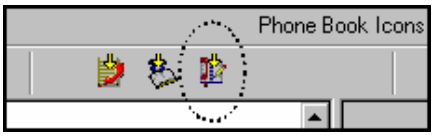
Chapter 6: Phonebook and URL Configuration

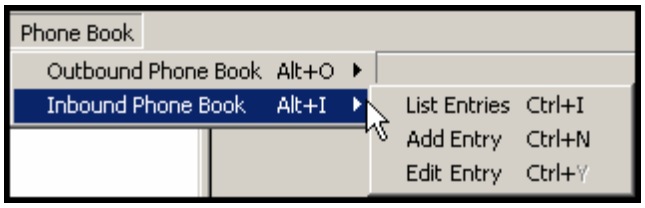
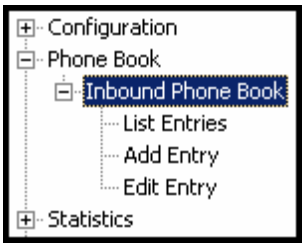
Introduction

After the TalkAnytime Configuration software has been installed and the unit has been configured with respect to IP address and telephony interface, etc., two additional kinds of settings must be addressed: (1) the Inbound Phonebook must be set to route incoming calls per system needs, and (2) a URL command line that includes several configuration settings derived from the Configuration software setup must be written and made available to the webmaster.

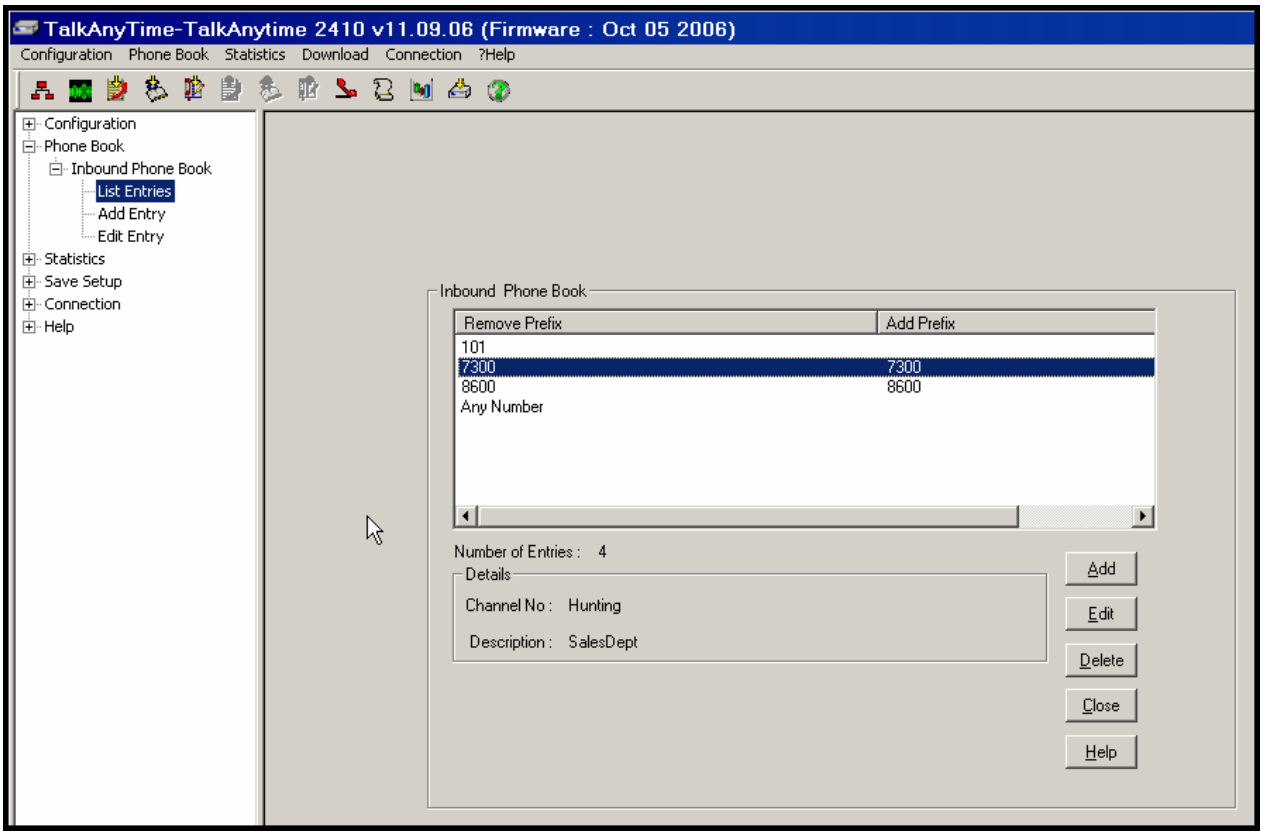
Inbound Phonebook

Inbound Phonebook configuration screens can be accessed using icons or the sidebar menu.

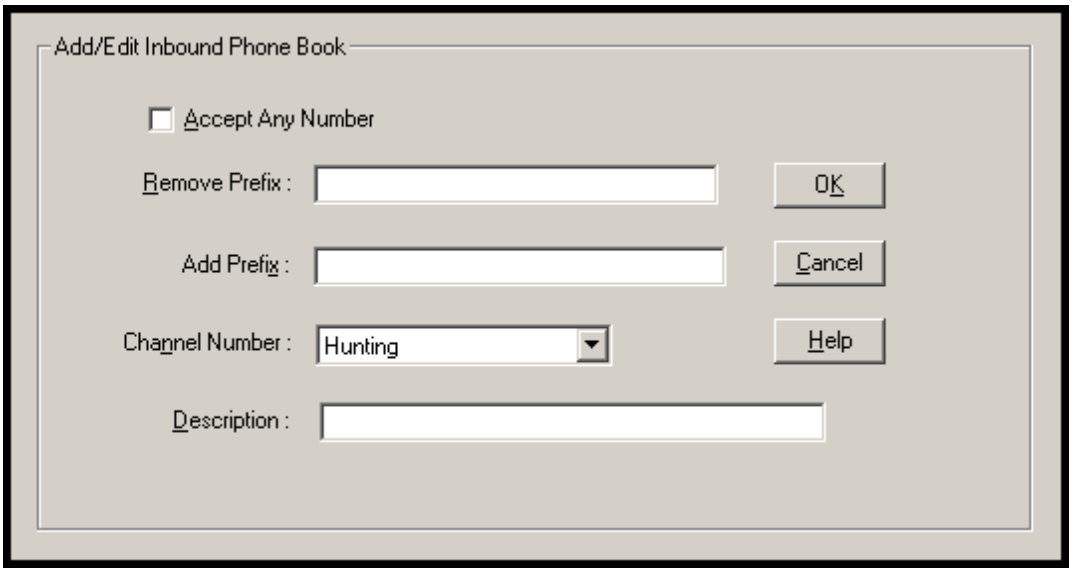
Phonebook Icons	Description
	Inbound Phonebook Entries List
	Add Inbound Phonebook Entry
	Edit selected Inbound Phonebook Entry

Phonebook Pulldown Menu			Phonebook Sidebar Menu
			
Inbound Phonebook Shortcut	Alt + I		

1. Select **Inbound PhoneBook | List Entries**. Click **Add**.



2. The **Add/Edit Inbound PhoneBook** screen appears.



Enter Inbound PhoneBook data for your TalkAnytime unit. The fields of the Add/Edit Inbound PhoneBook screen are described in the table below.

Add/Edit Inbound Phone Book: Field Definitions		
Field Name	**Values**	**Description**
Accept Any Number	**Values**: Y/N **Description:** When checked, "Any Number" appears as the value in the Remove Prefix field. **When no external routing device is used**. If **Any Number** is selected, calls received from phone numbers not matching a listed Prefix (shown in the Remove Prefix column of the Inbound Phone Book) will be admitted into the TalkAnytime unit on the channel listed in the **Channel Number** field. "Any Number" can be used in addition to one or more Prefixes.	
Remove Prefix	dialed digits	portion of dialed number to be removed before completing call to destination (often a local PBX)
Add Prefix	dialed digits	digits to be added before completing call to destination (often a local PBX)
Channel Number	1-4 or "Hunting" (for TA410) 1-8, or "Hunting" (for TA810)	Channel number to which the call will be assigned as it enters the local telephony equipment (often a local PBX). "Hunting" directs the call to any available channel.
Description	--	Describes the facility or geographical location at which the call originated. For TalkAnytime units, the expression used in this field also appears in the URL expression that the end user invokes to access the TalkAnytime system. So then, the Description expression entered in this field must match exactly the expression used in the "Service=" portion of the URL. Note that a separate Description expression can be used for each channel of the TalkAnytime unit.

3. When your Inbound PhoneBook entries are completed, click on **Save Setup** in the sidebar menu to save your configuration.

You can change your configuration at any time as needed for your system.

Remember that the initial TalkAnytime setup must be done locally or via the built-in Remote Configuration/Command Modem using the TalkAnytime configuration program. After the initial configuration is complete, the TalkAnytime unit can be configured, re-configured, and updated from one location using the TalkAnytime web GUI software program or the TalkAnytime program (in conjunction with the built-in modem).

TalkAnytime URL Configuration

End users will access the TalkAnytime by clicking on an icon on a web site. The web server must include a URL link expression that not only directs the caller to the TalkAnytime unit but also specifies values for several other parameters (four parameters are required; two are optional).

The general form of the URL expression is as follows:

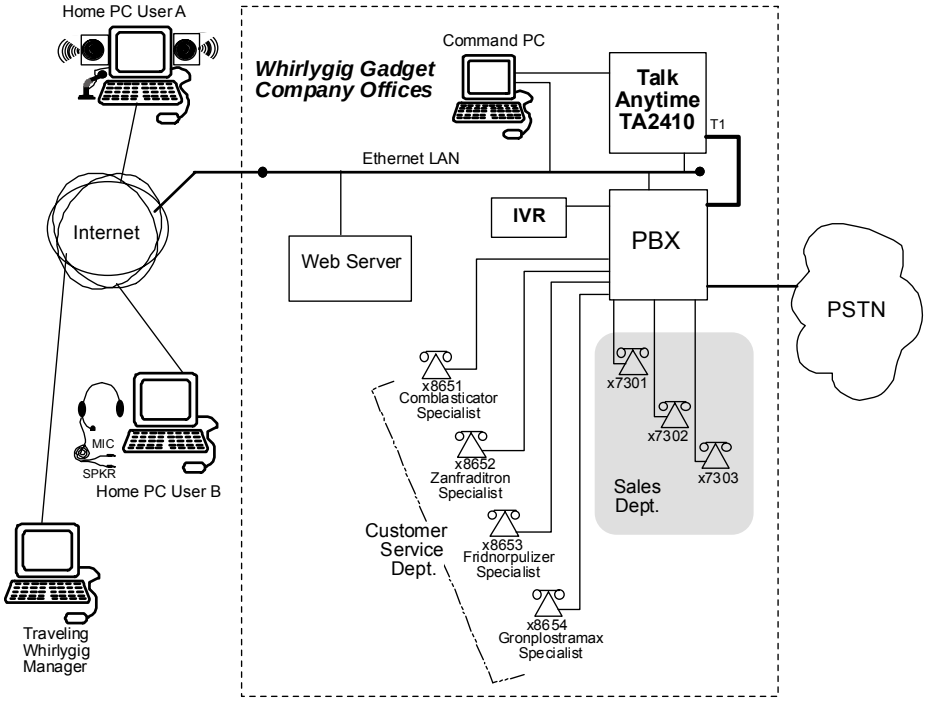
TalkAnytime URL Command Line	
http://*a.b.c.d*/tat.cgi?Service=*string1*&Protocol=*n*&Codec=*q*&SC=*w*&Packetization=*y*&Digits=*z*	
Configuration Parameter Involved	**Portion of URL in question**	**Comment**
TalkAnytime IP Address	where *a*, *b*, *c*, and *d* are variables; Values: 0 to 255	
Service	where *string1* is a variable; Values: any letters/numbers; *no spaces, periods, commas, or symbols*; 40 characters max.	This value must match the value of the *Description* field in the Inbound Phonebook.
Protocol	where *n* is a variable; Values: TCP or UDP	
Codec	where *q* is a variable; Values: G711A, G711U, G723,	
Silence Compression	where *w* is a variable; Values: ON, OFF	This parameter is optional. If omitted, remove the entire expression "SC=*w*" from the URL expression.
Packetization	where *y* is a variable; Values: 30, 60, 90, & 120 (for G723); 10, 20, 30, 40, 50, 60, 70, 80, & 90 (for G711A & G711U).	This parameter is optional. If omitted, remove the entire expression "Packetization=*y*" from the URL expression.
Digits	where *z* is a variable; Values: Yes, No	When Digits=No, the end user can use the TalkAnytime keypad to dial only after connection has been made. When Digits=Yes, the end user can user the TalkAnytime keypad to dial immediately.
allowed variant of tat.cgi?	tatfrm.cgi?	Used to eliminate black background behind TalkAnytime user screen.
Note:	All non-italicized characters in the URL expression are fixed literal characters that must be included verbatim. As noted above, the **tat.cgi?** expression has an allowed variant.	

Use of phonebook entries and URL command lines is illustrated in the ***TalkAnytime System Examples*** section that follows.

TalkAnytime System Examples

Introduction

The following example shows how the TalkAnytime unit operates in a specific telecommunications system.



In this system, the TalkAnytime unit is connected to a PBX system. Incoming calls are directed to two different departments, the Sales Department (where all call recipients are peers and it is satisfactory for the incoming caller to reach any one of them) and the Customer Service Department (where each call recipient is a specialist). We show 3 callers. Two are customers; the computer of one is equipped with a microphone/speaker headset; the computer of the other has external speakers and an external microphone. The third caller is an employee of the Whirlygig Gadget Company, a trusted party who has instructions on how to use the TalkAnytime unit to reach the public phone system (PSTN) as well as other Whirlygig employees through the PBX.

Example Types. We will show a configuration of TalkAnytime settings that allows 3 different types of calls:

(a) calls into a phone pool,

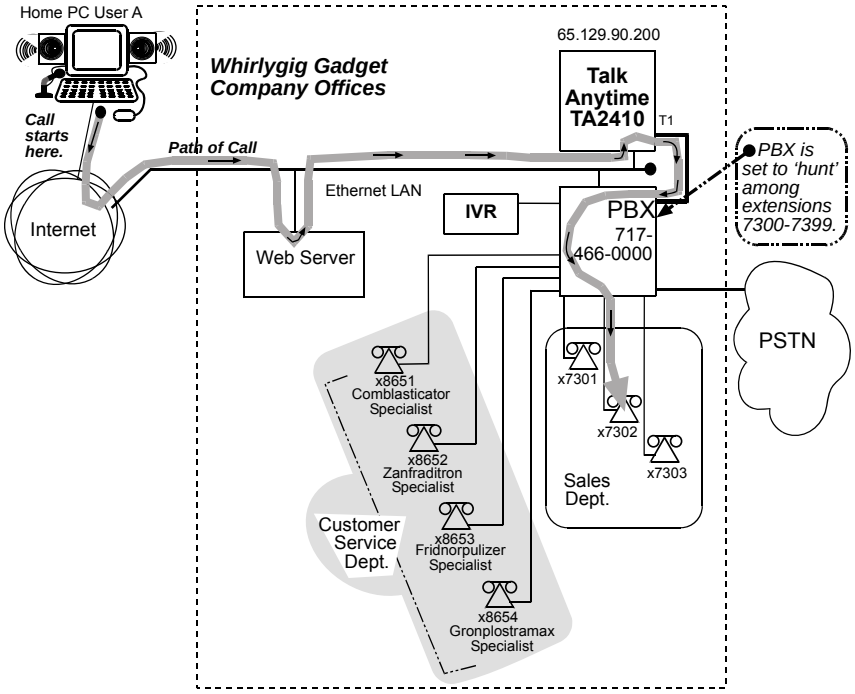
(b) calls directed to specific individual phones through an IVR (a voice recording device connected to a PBX and that plays a recorded message and allows callers to dial different extensions with DTMF signals from phone or keypad), and

(c) calls by a trusted party into an institutional PBX and out into the local public phone system (PSTN).

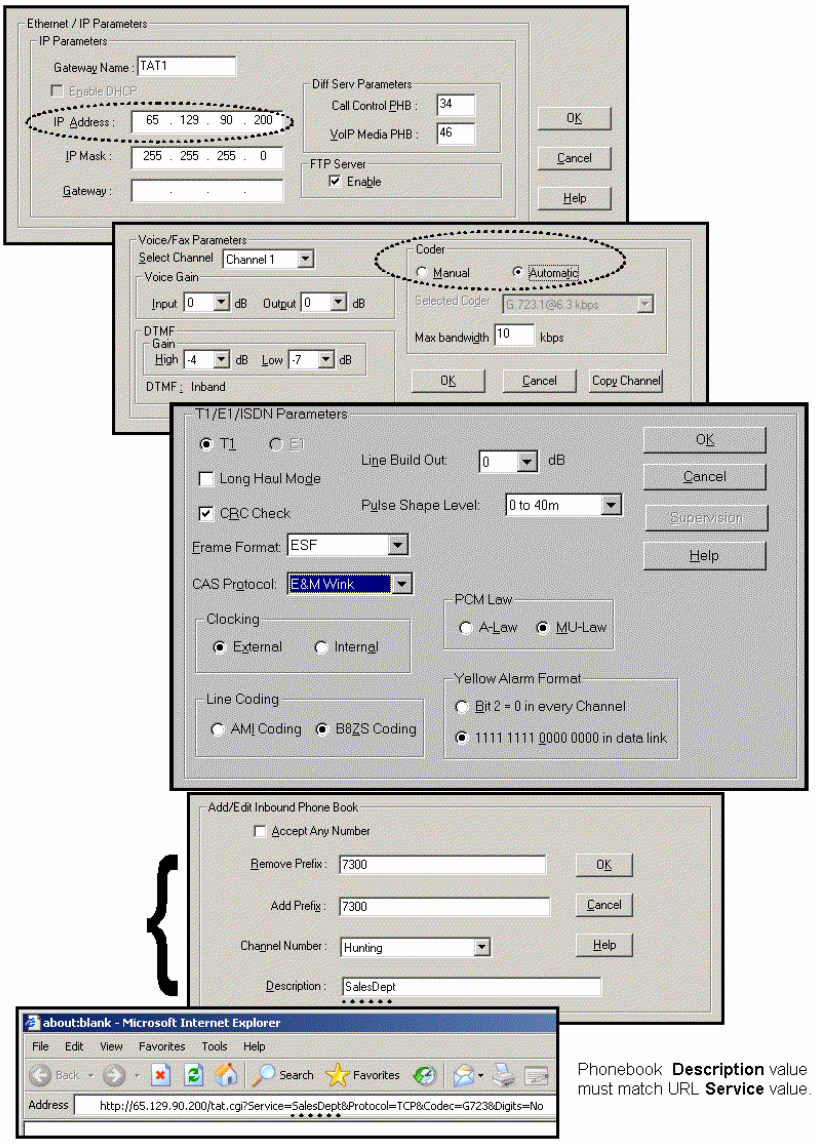
Calls into a Phone Pool

User-A Calls Sales Department. The drawing below shows a call coming into the Whirlygig Sales Department from a prospective customer. The PBX is set up to 'hunt' among a group of extensions allotted to the Sales Department. The TalkAnytime unit directs calls originating through the Whirlygig web server to the PBX and into the phone pool of sales representatives.

The main settings of the TalkAnytime Configuration Program, Phonebook, and web server URL that are required to implement this capacity are shown in the second drawing below. Note that, especially for the T1/E1/ISDN parameters, your settings must simply conform to the requirements of your PBX; there is no set of routine default values that can be depended upon to be widely applicable.



Technical Configuration for Phone Pool Call

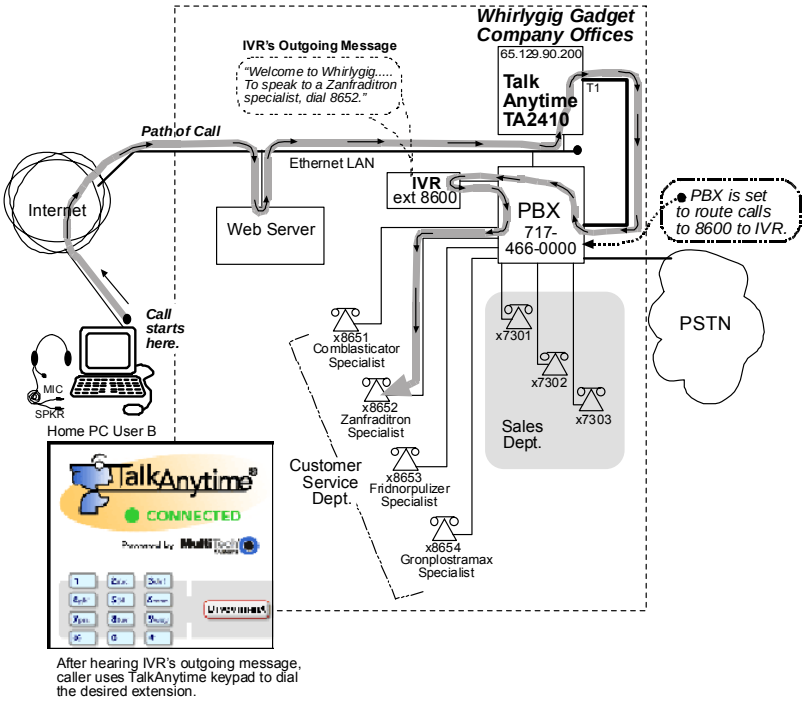


Phonebook **Description** value must match URL **Service** value.

Calls to Specific Extensions Through an IVR

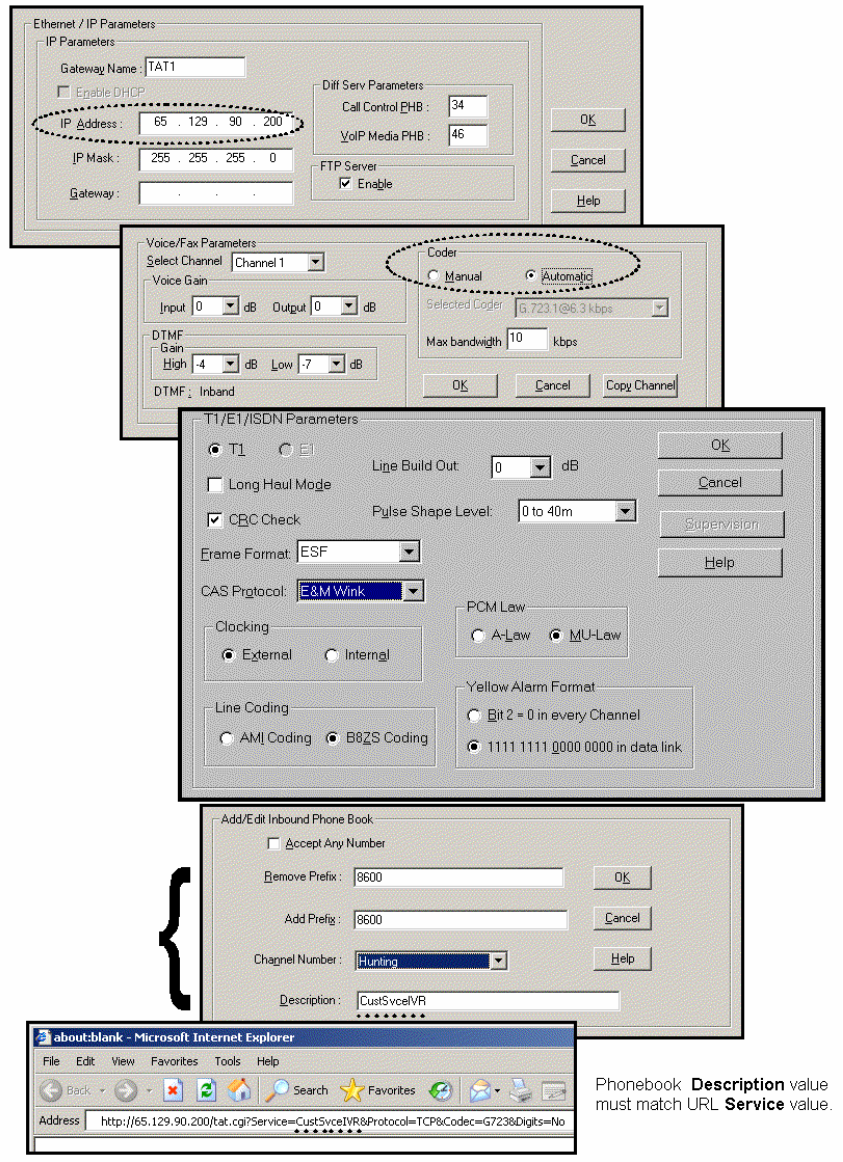
User-B Calls Customer Service Specialist. The drawing below shows a call coming into a particular product specialist in the Whirlygig Customer Service Department from customer concerned about a "Zanfraditron" device (a fictional product contrived for this example). The PBX is equipped with an IVR (which produces outgoing messages and allows DTMF in return from the caller) at extension 8600. In response to the outgoing message, the caller dials the desired extension for the Zanfraditron specialist on the TalkAnytime keypad and the connection is made.

The main settings of the TalkAnytime Configuration Program, Phonebook, and web server URL that are required to allow this kind of incoming call are shown in the second drawing below. Note that, especially for the T1/E1/ISDN parameters, your settings must simply conform to the requirements of your PBX; there is no set of routine default values that can be depended upon to be widely applicable.



After hearing IVR's outgoing message, caller uses TalkAnytime keypad to dial the desired extension.

Technical Configuration for Specific Extension Calls via IVR

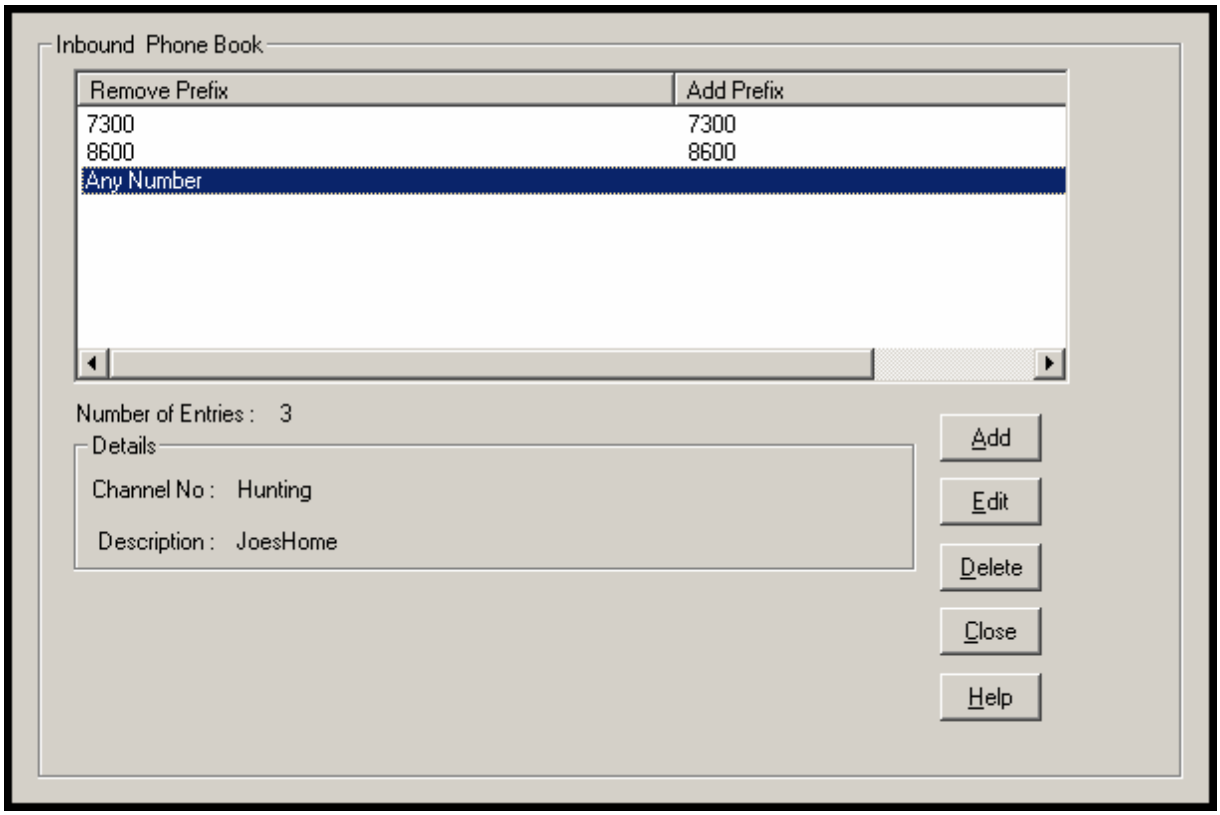


Alternative Method to Access Multiple Extensions. In this example, we used an IVR to allow access to various extensions of the PBX. Specifically, the end-user used the TalkAnytime keypad to dial digits in response to instructions given in the IVR's outgoing message.

Be aware that external extensions could have been reached in another way without an IVR: the end-user could be allowed to dial any extension on the PBX from the TalkAnytime keypad (determined by the setting *Digits=Yes* in the URL). In that case, the PBX would have to be configured in a way that blocks PSTN calling by the PBX extensions to which the TalkAnytime channels are connected. In either method, it is important to prevent unwanted access to the PSTN and especially toll calling through the PBX.

Inbound Phonebook List for Example System

The three uses of the TalkAnytime described here can be implemented simultaneously in a single system. Each type of use entails its own entry in the Phonebook. The resulting phonebook list is shown below.



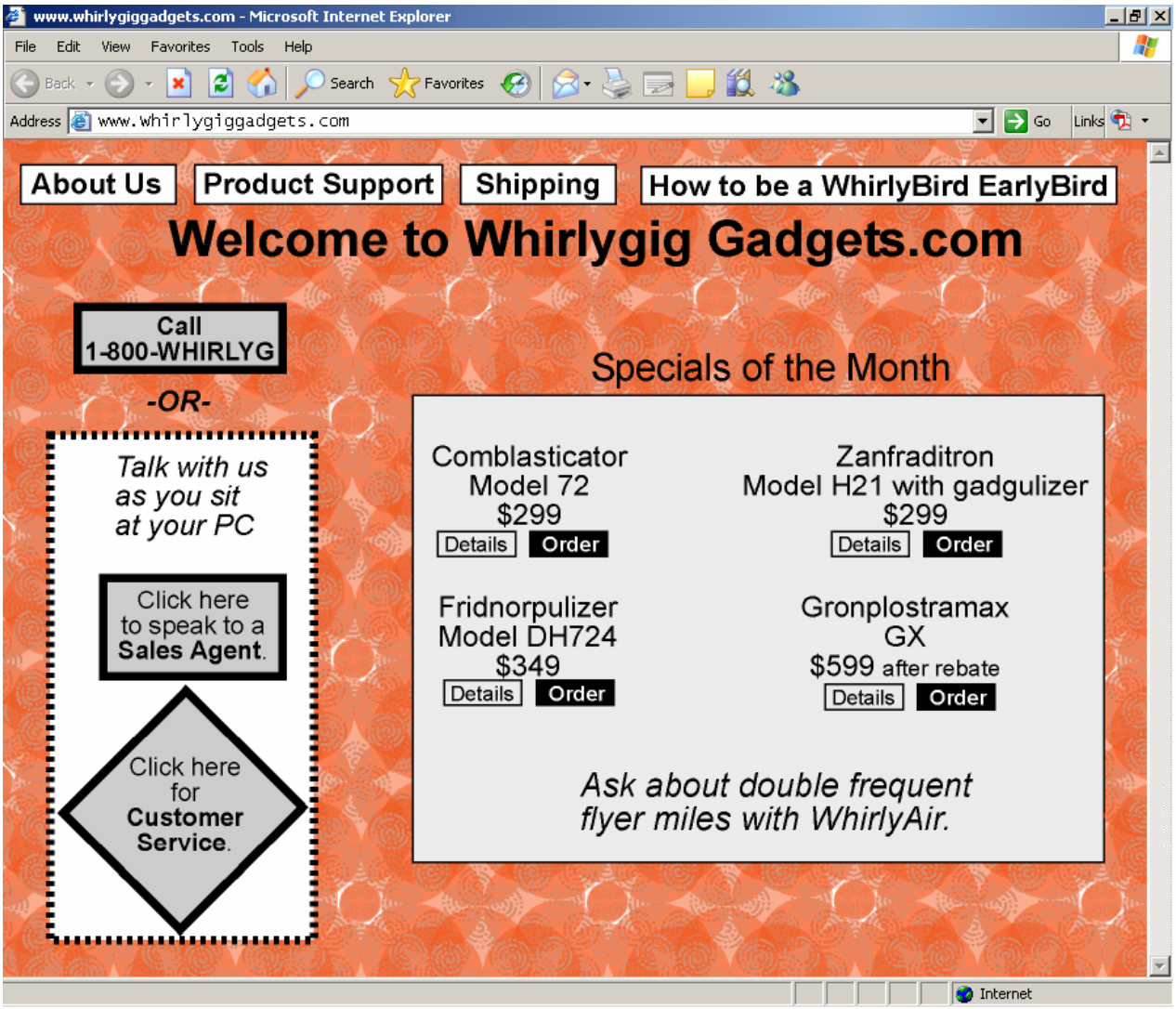
Alternative Method to Access Multiple Extensions. In this example, we used an IVR to allow access to various extensions of the PBX. Specifically, the end-user used the TalkAnytime keypad to dial digits in response to instructions given in the IVR's outgoing message.

Be aware that external extensions could have been reached in another way without an IVR: the end-user could be allowed to dial any extension on the PBX from the TalkAnytime keypad (determined by the setting *Digits*=*Yes* in the URL). In that case, the PBX would have to be configured in a way that blocks PSTN calling by the PBX extensions to which the TalkAnytime channels are connected. In either method, it is important to prevent unwanted access to the PSTN and especially toll calling through the PBX.

User's Perspective of TalkAnytime

For end-users TalkAnytime is an opportunity to conduct a toll-free voice call directly from their computers. The process begins when a user responds to a "click-to-talk" opportunity on a web site.

In the example shown here, the user can click on a rectangular icon to speak to a sales agent or on a diamond-shaped icon to speak to a customer service representative.



When the user clicks on either of these icons, the website will respond first by checking that the user's PC meets the basic requirements to use TalkAnytime.

These are the requirements:

User PC Requirements for TalkAnytime	
Category	**Requirement**
Operating System	Windows 98 or Windows XP
Browser	Internet Explorer 5.0 or higher
Audio Hardware	Microphone & Speaker (in any form)
O.S. Settings	Headset or microphone/speaker combo must be activated and not pre-empted by any other audio hardware or software.
Browser Settings	Popup Blocking must be disabled, at least for the IP address at which the TalkAnytime unit is operating. ActiveX controls must be enabled.

Qualifications Query Window. The following window will appear to the user.

Microsoft Internet Explorer
TalkAnytime®, the communication service that allows you to talk to a whirlygig representative via your Internet connection, requires a headset/microphone-equipped, multimedia computer running Internet Explorer 5.0 or higher.
Please cancel if you're running another browser or do not have a headset and microphone; otherwise, click 'OK' to continue.
OK
Cancel

Users who meet the requirements can continue by clicking **OK**.

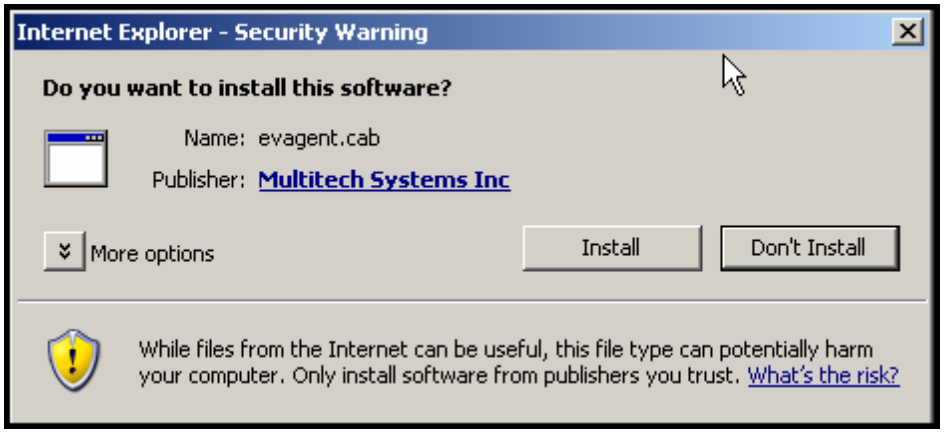
Installing the TalkAnytime Applet. Next the TalkAnytime applet program will begin downloading into the user's computer. This occurs each time TalkAnytime is used. (The applet does not remain available on the user's computer for future uses.) During the download, the following screen will appear.

When the download of the TalkAnytime applet is complete, a message will appear indicating that a second download may be necessary. This second download is an Activex control.

http://192.168.41.88 - TalkAnytime - Mic...
This site might require the following ActiveX control:
'evagent.cab' from 'Multitech Systems Inc'. Click her...
Install ActiveX Control...
What's the Risk?
Information Bar Help
TalkAnytime®
Powered by MultiTech Systems

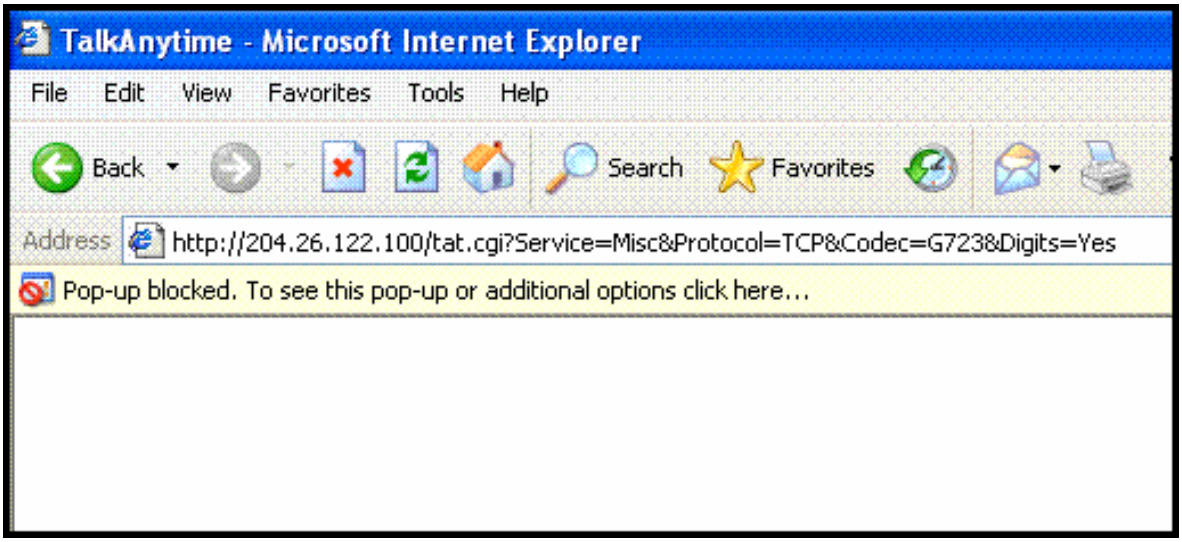
When the user right-clicks on the query box a menu will appear. Choose **Install ActiveX Control** to initiate the download.

A **Security Warning** screen will appear to confirm the download.


Internet Explorer - Security Warning
Do you want to install this software?
Name: evagent.cab
Publisher: Multitech Systems Inc
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

Popup Blocking. If the TalkAnytime URL is set to "Digits = Yes," which brings up a keypad for the user to dial specific extensions on the host PBX, then Popup Blocking must be disabled in the user's Internet Explorer, at least for the IP address on which the TalkAnytime unit is operating. If Popup Blocking remains activated in such cases, an error screen will appear and no voice connection will be made. This screen will advise the user that Popup Blocking must be disabled in order to use TalkAnytime.

When the popup-blocking function prevents TalkAnytime from being launched, a screen of this kind will appear:



During the Call. When this download is complete and the Popup Blocking issue (if any) has been resolved, the TalkAnytime voice session will begin. During the speech session, the graphic representation will be different.

Disconnection. At the end of the call, the user should click on the **Disconnect** button to end the connection. The applet screen will change accordingly.

Ending the Session. When the session is complete, the user can click on the **Close** button to shut down the applet program.

How Web Site Must Be Configured

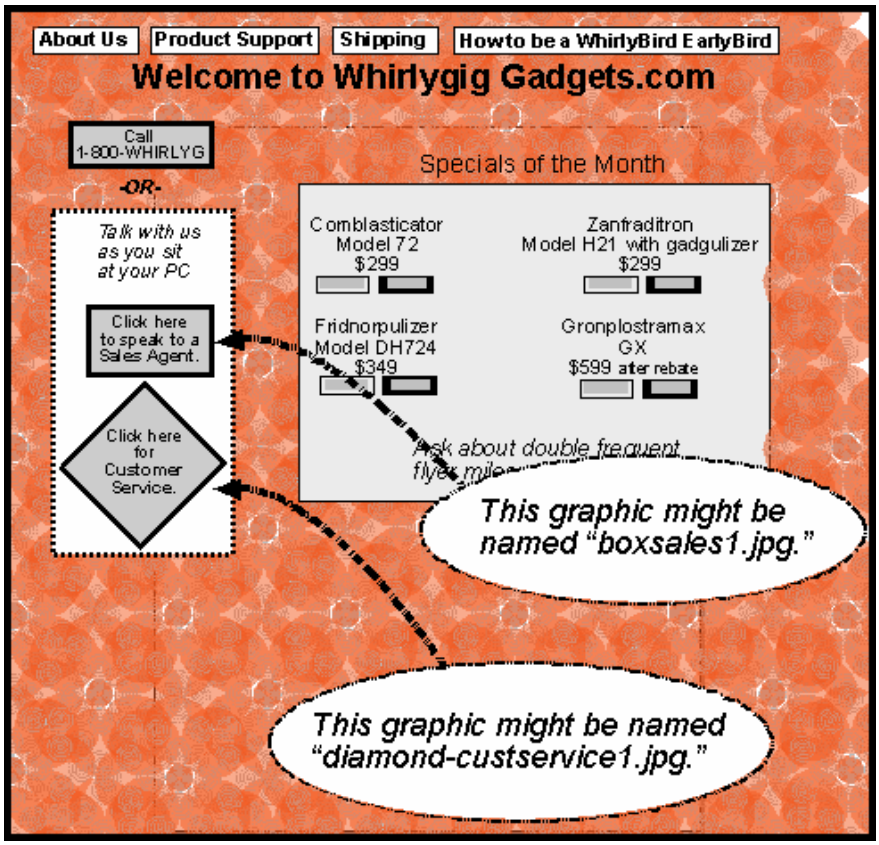
The webmaster must make several preparations for the TalkAnytime. The webmaster must:

- determine the IP address to be used for the TalkAnytime unit,
- have a graphic file that will be used as a target for the 'mouse-over' command that launches TalkAnytime for the user,
- produce a qualifications query window that informs user of user-PC requirements before downloading the TalkAnytime applet program, and
- establish a command line that includes the IP address of the TalkAnytime unit as well as several variable settings.

IP Address for TalkAnytime. Any location on the host site is OK.

Graphic File for Mouse-Over Targeting.

Any file will suffice. Typically the graphic image would include identify the department or product name associated with the call. For example, a web site might use separate graphic files to direct calls concerning various product lines or specially reduced-price products or promotions.


About Us
Product Support
Shipping
Howto be a WhirlyBird EarlyBird
Welcome to Whirlygig Gadgets.com
Call 1-800-WHIRLYG
-OR-
Talk with us as you sit at your PC
Click here to speak to a Sales Agent.
Click here for Customer Service.
Specials of the Month
Comblasticator Model 72 $299
Zanfraditron Model H21 with gadgulizer $299
Fridnorpulizer Model DH724 $349
Gronplostramax GX $599 after rebate
Ask about double frequent flyer mile
This graphic might be named "boxsales1.jpg."
This graphic might be named "diamond-custservice1.jpg."

These are HTML expressions needed to insert the graphics onto the web site.

```
<a href="" onMouseUp="confirmTalkAnytime()"><img
src="/images/Logos/Tradenames/boxsales1.jpg" ALT="TalkAnytime®" width="169" height="75"
border="0" /></a>
```

```
<a href="" onMouseUp="confirmTalkAnytime()"><img src="/images/Logos/Tradenames/diamond-
custservice1.jpg" ALT="TalkAnytime®" width="169" height="75" border="0" /></a>
```

Qualifications Query Window.

When an online computer user clicks on the TalkAnytime icon, a message appears that indicates that the computer being used must meet certain requirements in order to use TalkAnytime.

These are the requirements:

User PC Requirements for TalkAnytime	
Category	**Requirement**
Operating System	Windows 98 or Windows XP
Browser	Internet Explorer 5.0 or higher
Audio Hardware	Microphone & Speaker (in any form)
O.S. Settings	Headset or microphone/speaker combo must be activated and not pre-empted by any other audio hardware or software.
Browser Settings	Popup Blocking must be disabled, at least for the IP address at which the TalkAnytime unit is operating. ActiveX controls must be enabled.

The following window will appear to the user.

Microsoft Internet Explorer
TalkAnytime®, the communication service that allows you to talk to a whirlygig representative via your Internet connection, requires a headset/microphone-equipped, multimedia computer running Internet Explorer 5.0 or higher.
Please cancel if you're running another browser or do not have a headset and microphone; otherwise, click 'OK' to continue.
OK
Cancel

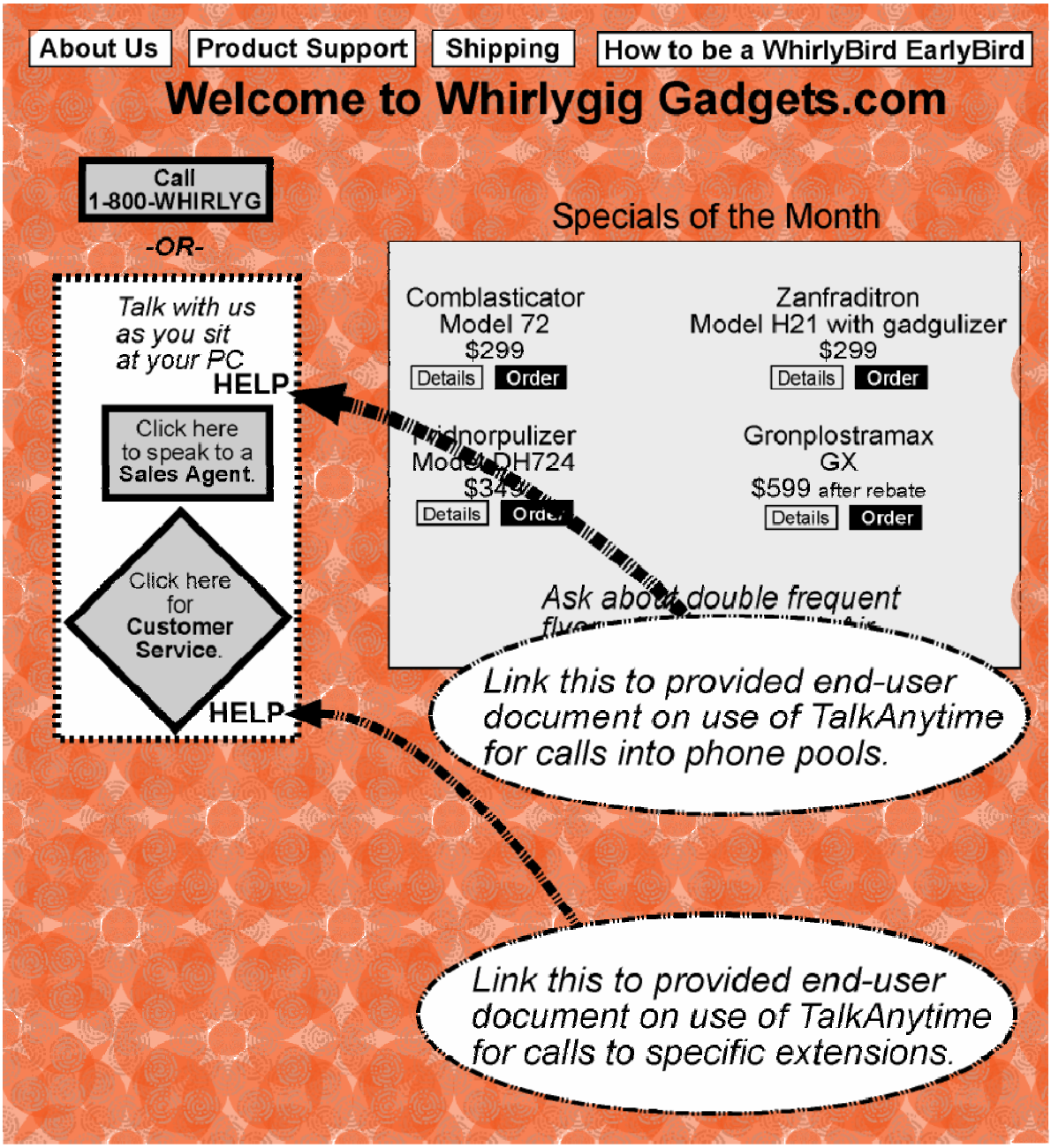
The following is a JavaScript command that would create such a graphical qualifications query window.

```
function confirmTalkAnytime() {
  if(confirm("TalkAnytime®, the communication service that allows you to
      talk to your \n" +
      "whirlygig representative via your Internet connection,
      requires a \n" +
      "headset/microphone-equipped, multimedia computer running Internet
      Explorer \n" +  "5.0 or higher.  \n" +  " \n" +  "Please cancel if
      you're running another browser or do not have a headset \n" +
      "and microphone; otherwise, click 'OK' to continue.") == true) {
  var DaName = "TalkAnytime® Communication Window";
window.open("http://65.129.90.200/tatfrm.cgi?Service=Sales&Codec=G723&Pr
      otocol=TCP&Packetization=30&Digits=No",null,"height=285,width=310,
      bar=no,resizable=no,status=no,toolbar=no,menubar=no,location=no,sc
      rollbars=no",true);
      }
      }
```

The administrator and webmaster can customize the query window message as needed.

Help Documents for End-Users

MultiTech has provided documents in PDF format to explain to end-users the operating requirements of TalkAnytime. There are three of these files (one for calling into phone pools, a second for incoming calls to specific extensions, and a third for trusted users/employees who are granted access to the PBX via the TalkAnytime. These files are included on the TalkAnytime product CD.


About Us
Product Support
Shipping
How to be a WhirlyBird EarlyBird
Welcome to Whirlygig Gadgets.com
Call 1-800-WHIRLYG
-OR-
Talk with us as you sit at your PC
HELP
Click here to speak to a Sales Agent.
Click here for Customer Service.
HELP
Specials of the Month
Comblasticator Model 72 $299
Details
Order
Zanfraditron Model H21 with gadgulizer $299
Details
Order
Gronplostramax GX $599 after rebate
Details
Order
Ask about double frequent
Link this to provided end-user document on use of TalkAnytime for calls into phone pools.
Link this to provided end-user document on use of TalkAnytime for calls to specific extensions.

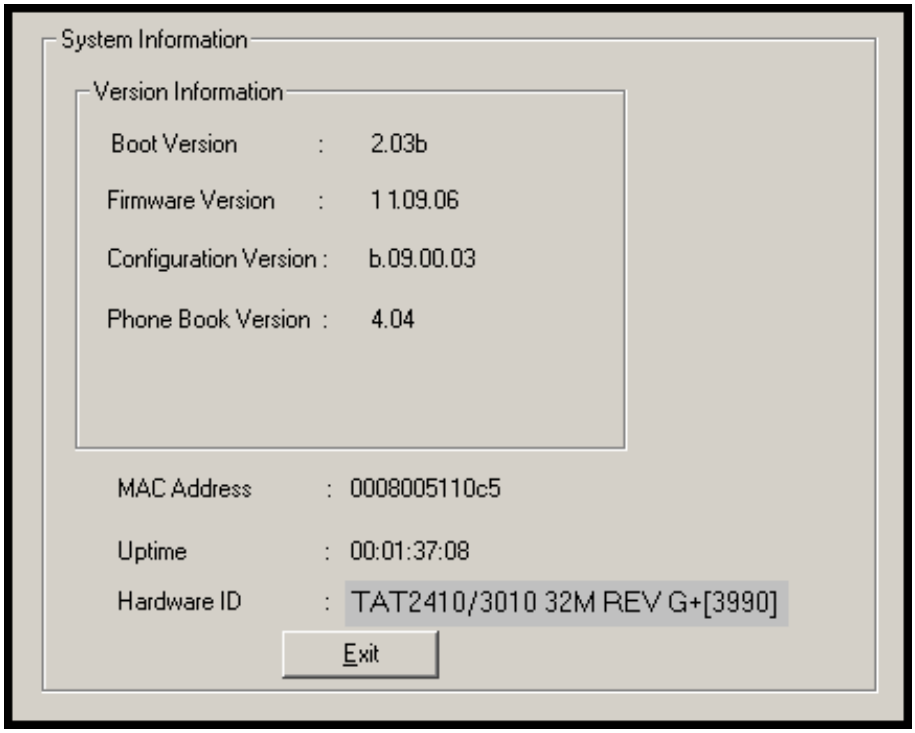
Chapter 7: Operation and Maintenance

Operation and Maintenance

Although most Operation and Maintenance functions of the software are in the **Statistics** group of screens, an important summary appears in the **System Information** of the **Configuration** screen group.

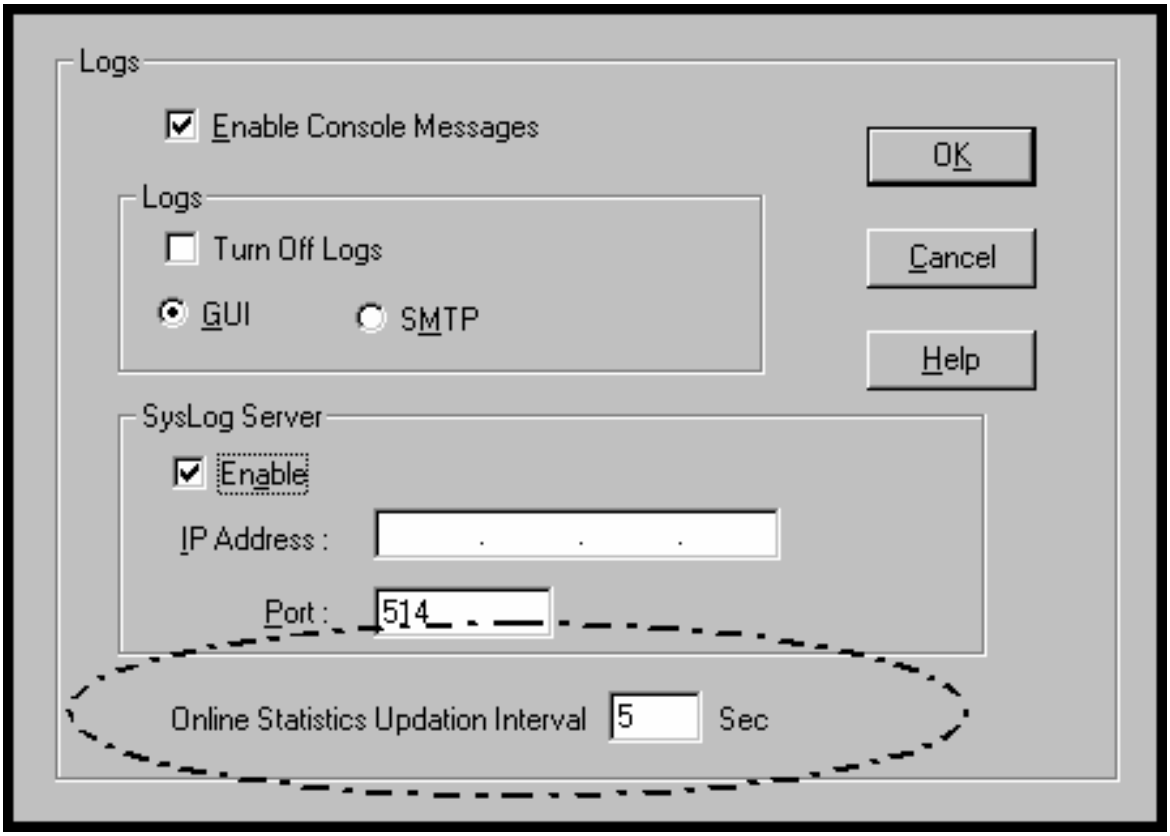
System Information screen

This screen presents vital system information at a glance. Its primary use is in troubleshooting. This screen is accessible via the **Configuration** pulldown menu, the **Configuration** sidebar menu, or by the keyboard shortcut **Ctrl + Alt + Y**.



System Information Parameter Definitions		
Field Name	**Values**	**Description**
Boot Version	nn.nn alpha-numeric	Indicates the version of the code that is used at the startup (booting) of the TalkAnytime. The boot code version is independent of the software version.
Firmware Version	nn.nn.nn alpha-numeric	Indicates the version of the TalkAnytime firmware.
Configur-ation Version	nn.nn. nn.nn alpha-numeric	Indicates the version of the TalkAnytime configuration software.
Phone Book Version	nn.nn alpha-numeric	Indicates the version of the TalkAnytimephone book being used.
Mac Address	numeric	Denotes the number assigned as the TalkAnytime unit's unique Ethernet address.
Up Time	days: hours: mm:ss	Indicates how long the TalkAnytime unit has been running since its last booting.
Hardware ID	alpha-numeric	Indicates version of the TalkAnytime circuit board assembly being used.

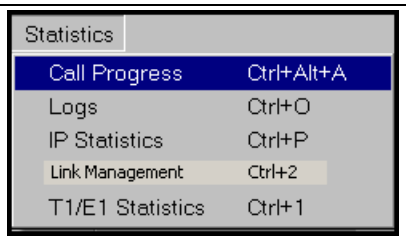
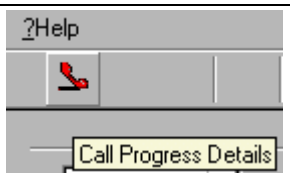
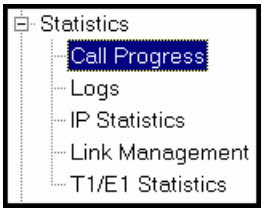
The frequency with which the **System Information** screen is updated is determined by a setting in the **Logs** screen



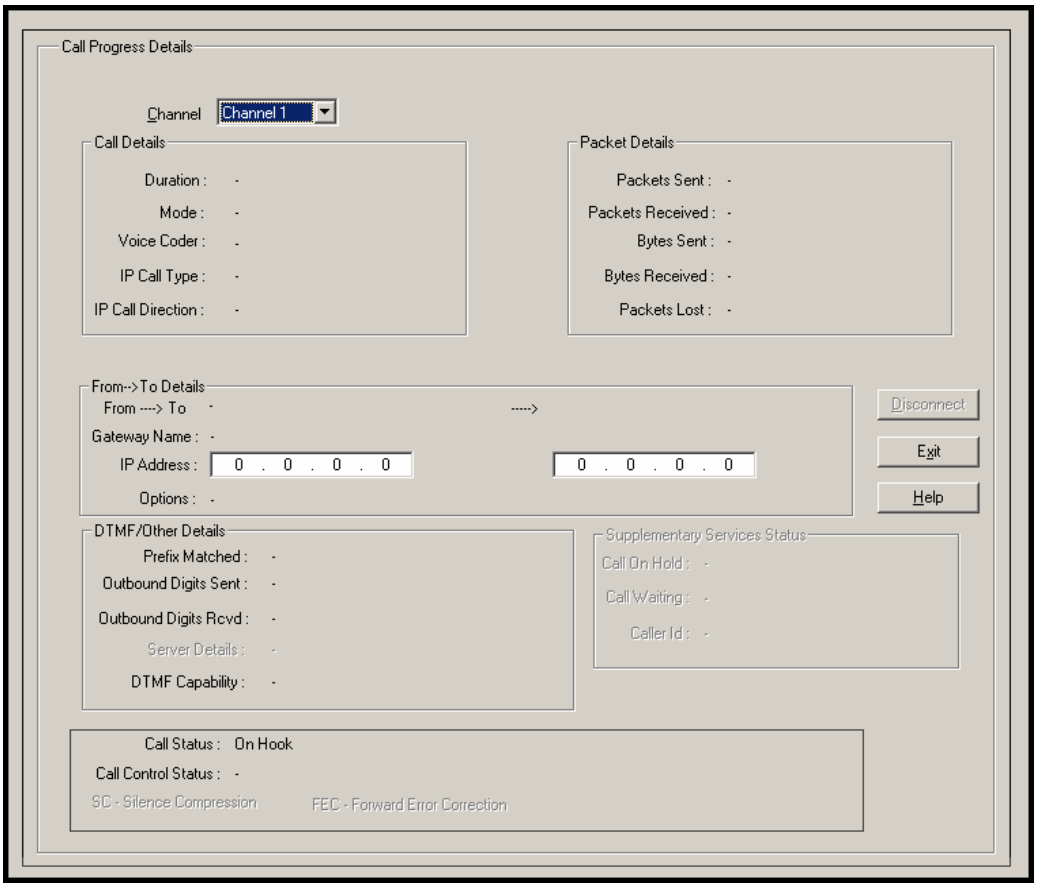
Statistics Screens

Ongoing operation of the TalkAnytime unit can be monitored for performance using the Statistics functions of the TalkAnytime software.

About Call Progress

Accessing Call-Progress Statistics		
Channel Icons (Main Screen Lower Left)	**Pulldown**	**Icon**
		
	Shortcut	**Sidebar**
In the web GUI, call progress details can be viewed by clicking on an icon (one for each channel) arranged similarly on the web-browser screen.	`Ctrl + Alt + A`	

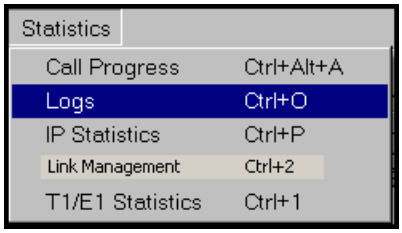
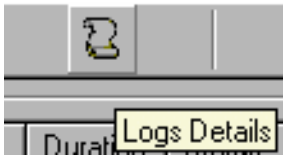
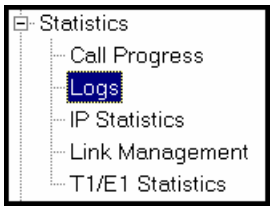
The Call Progress Details Screen



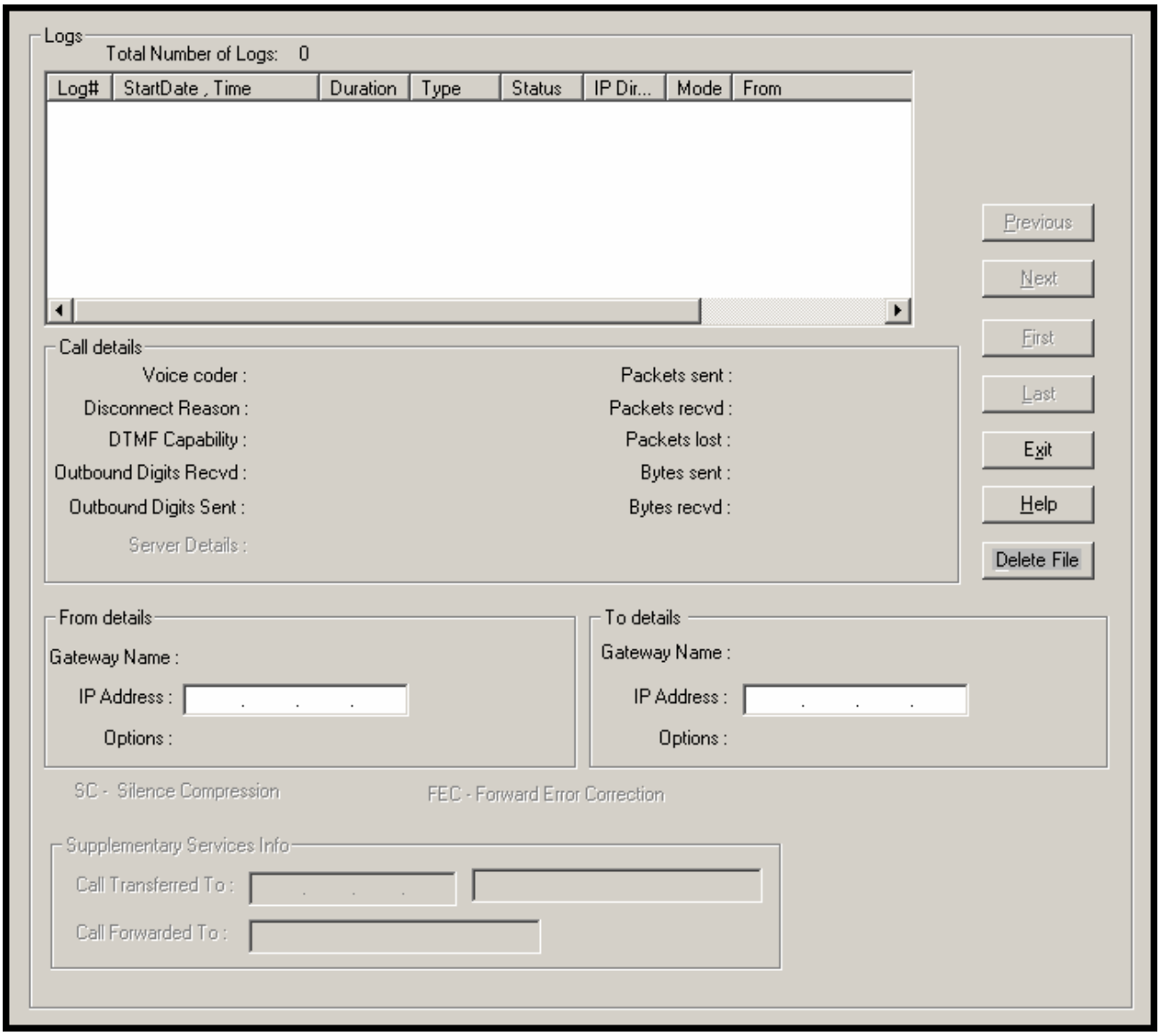
Call Progress Details: Field Definitions		
Field Name	**Values**	**Description**
Channel	1-n	Number of data channel or time slot on which the call is carried. This is the channel for which call-progress details are being viewed.
Call Details		
Duration	Hours: Minutes: Seconds	The length of the call in hours, minutes, and seconds (hh:mm:ss).
Mode	Voice or FAX	Indicates whether the call being described was a voice call or a FAX call.
Voice Coder	G.723, G.729, G.711, etc.	The voice coder being used on this call.
IP Call Type	H.323, SIP, or SPP	Unlike the MultiVOIP products to which the TalkAnytime is related, TalkAnytime units use a proprietary call signaling protocol rather than any of the standard or Multi-Tech specific protocols (H.323, SIP, or SPP).
IP Call Direction	incoming, outgoing	Indicates whether the call in question is an incoming call or an outgoing call.
Packet Details		
Packets Sent	integer value	The number of data packets sent over the IP network in the course of this call.
Packets Rcvd	integer value	The number of data packets received over the IP network in the course of this call.
Bytes Sent	integer value	The number of bytes of data sent over the IP network in the course of this call.
Bytes Rcvd	integer value	The number of bytes of data received over the IP network in the course of this call.
Packets Lost	integer value	The number of voice packets from this call that were lost after being received from the IP network.
From – To Details		
Gateway Name (from)	alphanumeric string	Identifier for the VOIP gateway that handled the origination of this call.
IP Address (from)	x.x.x.x, where x has a range of 0 to 255	IP address from which the call was received.
Options	SC, FEC	Displays VOIP transmission options in use on the current call. These may include Forward Error Correction or Silence Compression.
Gateway Name (to)	alphanumeric string	Identifier for the VOIP gateway that handled the completion of this call.
IP Address (to)	x.x.x.x, where x has a range of 0 to 255	IP address to which the call was sent.
Options	SC, FEC	Displays VOIP transmission options in use on the current call. These may include Forward Error Correction or Silence Compression.

Call Progress Details: Field Definitions (cont'd)		
DTMF/Other Details		
Field Name	**Values**	**Description**
Prefix Matched	specified dialing digits	Displays the dialed digits that were matched to a phonebook entry.
Outbound Digits Sent	0-9, #, *	The digits transmitted by the TalkAnytime to the PBX/telco for this call.
Outbound Digits Received	0-9, #, *	Of the digits transmitted by the TalkAnytime to the PBX/telco for this call, these are the digits that were confirmed as being received.
Server Details	n.n.n.n (for n=0-255) and/or other server IP-related descriptions	The IP address (etc.) of the traffic control server (if any) being used (whether an H.323 gatekeeper, a SIP proxy, or an SPP registrar gateway) will be displayed here if the call is handled through that server. *Not applicable for TalkAnytime units.*
DTMF Capability	inband, out of band Expressions differ slightly for different Call Signaling protocols (H.323, SIP, or SPP).	Indicates whether the DTMF dialing digits are carried "Inband" or "Out of Band." The corresponding field values differ for the 3 different voip protocols. For H.323, this field can display "Out of Band" or "Inband". For SIP it can display either "Out of Band RFC2833" or "Out of Band SIP INFO" to indicate the out-of-band condition or "Inband" to indicate the in-band condition. For SPP it can display "Out of Band RFC2833" or "Inband".
Supplementary Services Status		*These fields are not applicable to TalkAnytime.*
Call Status fields		
Call Status	hangup, active	Shows condition of current call.
Call Control Status	Tun, FS + Tun, AE, Mux	Displays the H.323 version 4 features in use for the selected call. These include tunneling (Tun), Fast Start with tunneling (FS + Tun), Annex E multiplexed UDP call signaling transport (AE), and Q.931 Multiplexing (Mux). See **Phonebook Configuration Parameters** (in T1 or E1 chapters) for more on H.323v4 features.
Silence Compression	SC	"SC" stands for Silence Compression. With **Silence Compression** enabled, the TalkAnytime will not transmit voice packets when silence is detected, thereby reducing the amount of network bandwidth that is being used by the voice channel.
Forward Error Correction	FEC	"FEC" stands for Forward Error Correction. **Forward Error Correction** enables some of the voice packets that were corrupted or lost to be recovered. FEC adds an additional 50% overhead to the total network bandwidth consumed by the voice channel. Default = Off

About Logs

Accessing "Statistics: Logs"			
Pulldown	**Icon**	**Shortcut**	**Sidebar**
		`Ctrl + O`	

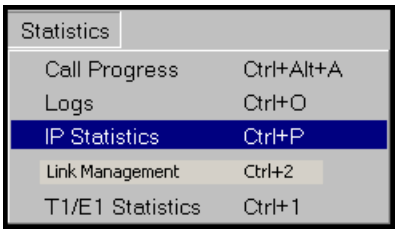
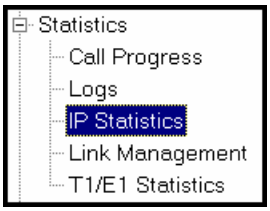
The Logs Screen



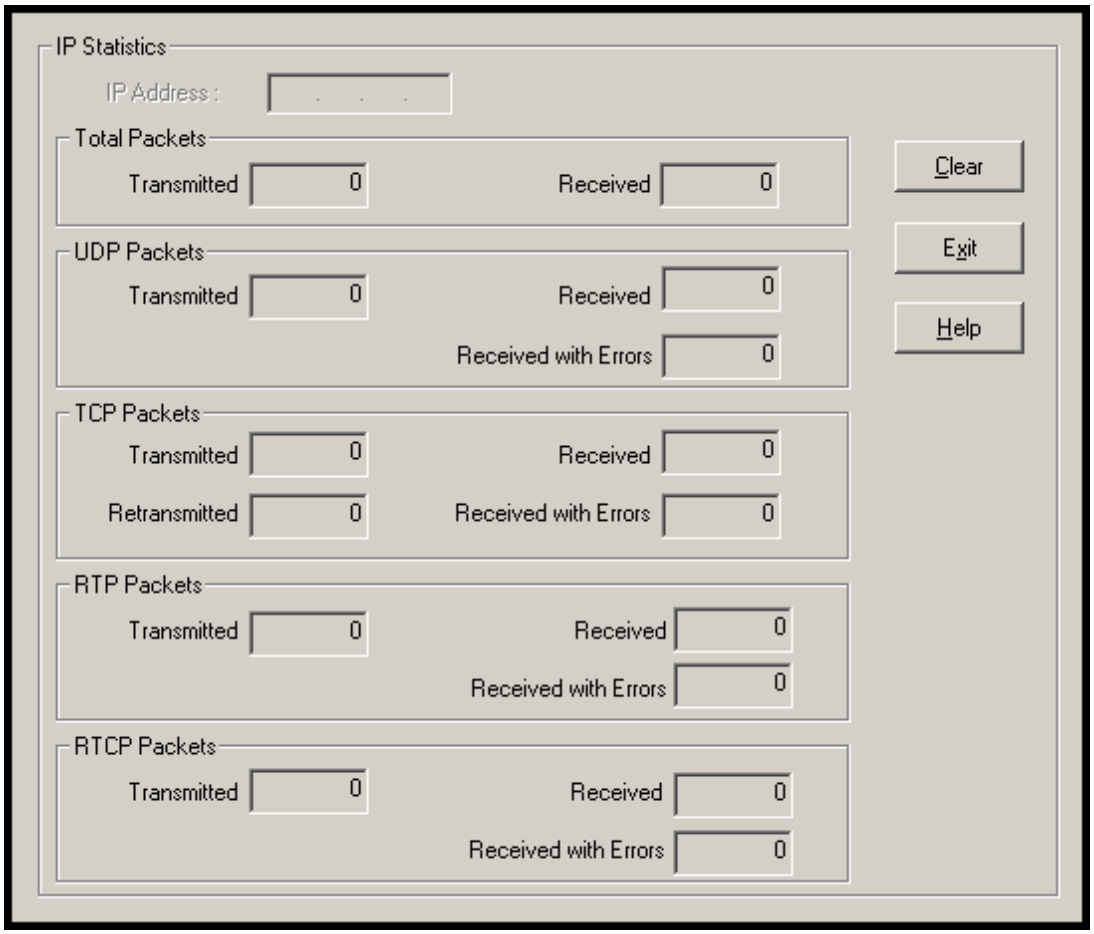
Logs Screen Details: Field Definitions (cont'd)		
Field Name	**Values**	**Description**
Log # column	1 or higher	All calls are assigned an event number in chronological order, with the most recent call having the highest event number.
Start Date,Time column	dd:mm:yyyy hh:mm:ss	The starting time of the call (event). The date is presented as a day expression of one or two digits, a month expression of one or two digits, and a four-digit year. This is followed by a time-of-day expression presented as a two-digit hour, a two-digit minute, and a two-digit seconds value. (statistics, logs) field
Duration column	hh:mm:ss	This describes how long the call (event) lasted in hours, minutes, and seconds.
Type	H.323, SIP, or SPP	Indicates the Call Signaling protocol used for the call (H.323, SIP, or SPP).
Status column	success or failure	Displays the status of the call, i.e., whether the call was completed successfully or not.
IP Direction	incoming, outgoing	Indicates whether the call is "incoming" or "outgoing" with respect to the gateway.
Mode column	voice or FAX	Indicates whether the (event) being described was a voice call or a FAX call.
From column	gateway name	Displays the name of the voice gateway that originates the call.
To column	gateway name	Displays the name of the voice gateway that completes the call.
Special Buttons		
Previous	--	Displays log entry before currently selected one.
Next	--	Displays log entry after currently selected one.
First	--	Displays first log entry
Last	--	Displays last log entry.
Delete File	--	Deletes selected log file.
Call Details		
Voice coder	G.723, G.729, G.711, etc.	The voice coder being used on this call.
Disconnect Reason	Values are "Normal" and "Local" disconnection.	Indicates whether the call was disconnected simply because the desired conversation was done or some other irregular cause occasioned disconnection (e.g., a technical error or failure).
DTMF Capability	inband, out of band Expressions differ slightly for different Call Signaling protocols (H.323, SIP, or SPP).	Indicates whether the DTMF dialing digits are carried "Inband" or "Out of Band." The corresponding field values differ for the 3 different voip protocols. For H.323, this field can display "Out of Band" or "Inband". For SIP it can display either "Out of Band RFC2833" or "Out of Band SIP INFO" to indicate the out-of-band condition or "Inband" to indicate the in-band condition. For SPP it can display "Out of Band RFC2833" or "Inband".
Outbound Digits Received	0-9, #, *	The digits, sent by TalkAnytime to PBX/telco, that were acknowledged as having been received by the remote voip gateway.
Outbound Digits Sent	0-9, #, *	The digits transmitted by the TalkAnytime to the PBX/telco for this call.
Server Details	--	*This field is not applicable to TalkAnytime.*
Packets sent	integer value	The number of data packets sent over the IP network in the course of this call.
Packets received	integer value	The number of data packets received over the IP network in the course of this call.
Packets loss (lost)	integer value	The number of voice packets from this call that were lost after being received from the IP network.
Bytes sent	integer value	The number of bytes of data sent over the IP network in the course of this call.
Bytes received	integer value	The number of bytes of data received over the IP network in the course of this call.

Logs Screen Details: Field Definitions (cont'd)		
Field Name	**Values**	**Description**
Call Details (cont'd)		
FROM Details		
Gateway Name	alphanumeric string	Identifier for the VOIP gateway that originated this call.
IP Address	x.x.x.x, where x has a range of 0 to 255	IP address of the VOIP gateway from which the call was received.
Options	FEC, SC	Displays VOIP transmission options used by the VOIP gateway originating the call. These may include Forward Error Correction or Silence Compression.
TO Details		
Gateway Name	alphanumeric string	Identifier for the VOIP gateway that completed (terminated) this call.
IP Address	x.x.x.x, where x has a range of 0 to 255	IP address of the VOIP gateway at which the call was completed (terminated).
Options		Displays VOIP transmission options used by the VOIP gateway terminating the call. These may include Forward Error Correction or Silence Compression.
Supplementary Services Info		*These fields are not applicable to TalkAnytime.*

About IP Statistics

Accessing IP Statistics			
Pulldown	**Sidebar**	**Shortcut**	**Icon**
		`Ctrl + P`	

IP Statistics Screen



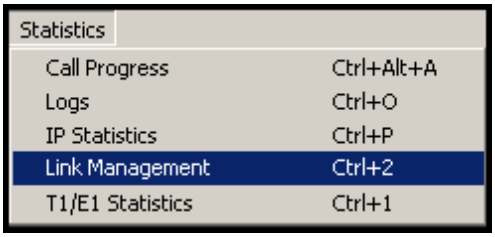
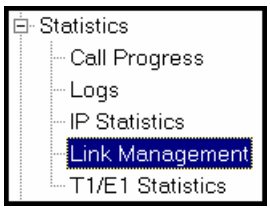
IP Statistics: Field Definitions .		
Field Name	**Values**	**Description**
		UDP versus TCP. (User Datagram Protocol versus Transmission Control Protocol). UDP provides unguaranteed, connectionless transmission of data across an IP network. By contrast, TCP provides reliable, connection-oriented transmission of data.Both TCP and UDP split data into packets called "datagrams." However, TCP includes extra headers in the datagram to enable retransmission of lost packets and reassembly of packets into their correct order if they arrive out of order. UDP does not provide this. Lost UDP packets are unretrievable; that is, out-of-order UDP packets cannot be reconstituted in their proper order.. Despite these obvious disadvantages, UDP packets can be transmitted much faster than TCP packets -- as much as three times faster. In certain applications, like audio and video data transmission, the need for high speed outweighs the need for verified data integrity. Sound or pictures often remain intelligible despite a certain amount of lost or disordered data packets (which appear as static).
IP Address	n.n.n.n 0 - 255	IP address of the TalkAnytime. For an IP address to be displayed here, the TalkAnytime must have DHCP enabled. Its IP address, in such a case, is assigned by the DHCP server.
"Clear" button	--	Clears packet tallies from memory.
Total Packets		Sum of data packets of all types.
Transmitted	integer value	Total number of packets transmitted by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received	integer value	Total number of packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received with Errors	integer value	Total number of error-laden packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
UDP Packets		User Datagram Protocol packets.
Transmitted	integer value	Number of UDP packets transmitted by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received	integer value	Number of UDP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received with Errors	integer value	Number of error-laden UDP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
TCP Packets		Transmission Control Protocol packets.
Transmitted	integer value	Number of TCP packets transmitted by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received	integer value	Number of TCP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received with Errors	integer value	Number of error-laden TCP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.

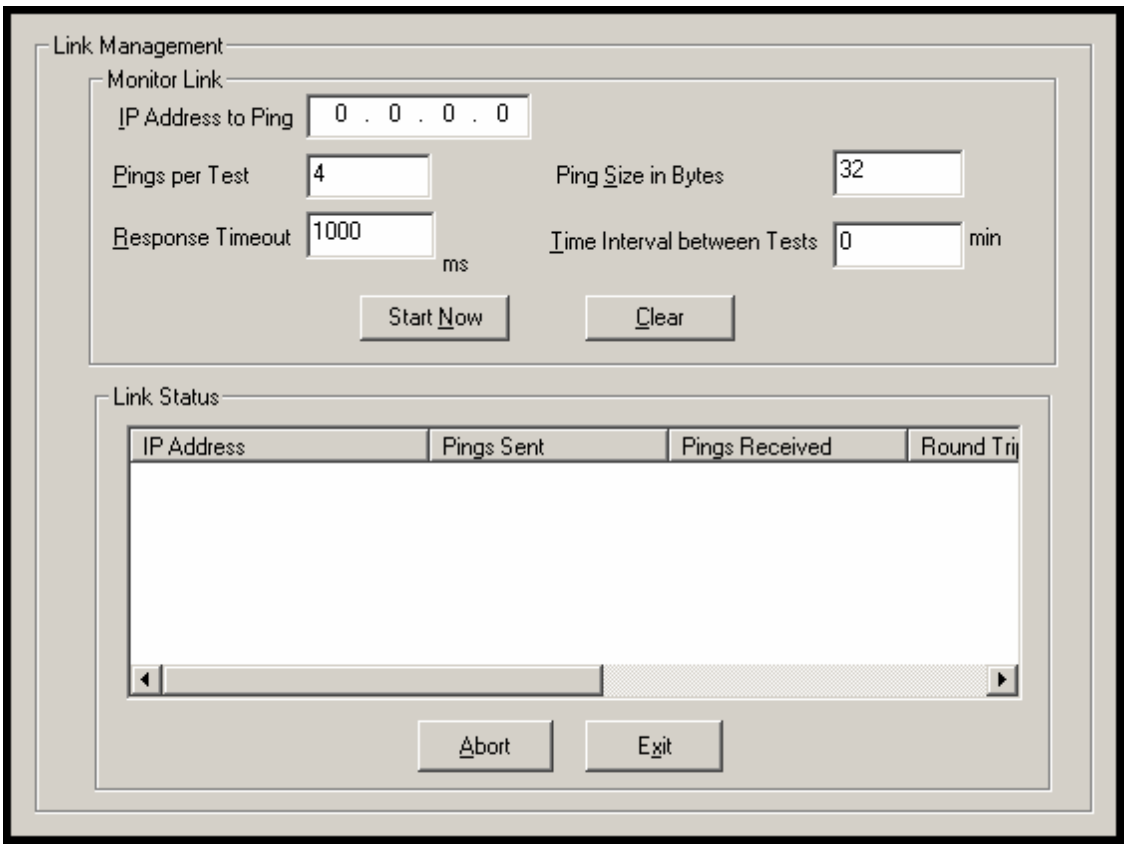
IP Statistics: Field Definitions (cont'd)		
Field Name	**Values**	**Description**
Total Packets (cont'd)		Sum of data packets of all types.
Received with Errors	integer value	Total number of error-laden packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
UDP Packets		User Datagram Protocol packets.
Transmitted	integer value	Number of UDP packets transmitted by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received	integer value	Number of UDP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received with Errors	integer value	Number of error-laden UDP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
TCP Packets		Transmission Control Protocol packets.
Transmitted	integer value	Number of TCP packets transmitted by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received	integer value	Number of TCP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received with Errors	integer value	Number of error-laden TCP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.

IP Statistics: Field Definitions (cont'd)		
RTP Packets		Voice signals are transmitted in Realtime Transport Protocol packets. RTP packets are a type or subset of UDP packets.
Transmitted	integer value	Number of RTP packets transmitted by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received	integer value	Number of RTP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received with Errors	integer value	Number of error-laden RTP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
RTCP Packets		Realtime Transport Control Protocol packets convey control information to assist in the transmission of RTP (voice) packets. RTCP packets are a type or subset of UDP packets.
Transmitted	integer value	Number of RTCP packets transmitted by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received	integer value	Number of RTCP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.
Received with Errors	integer value	Number of error-laden RTCP packets received by this VOIP gateway since the last "clearing" or resetting of the counter within the TalkAnytime software.

About Link Management

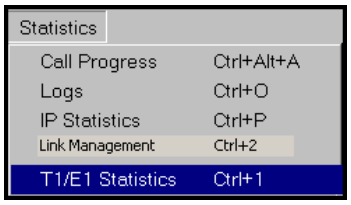
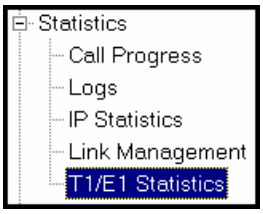
The Link Management screen is essentially an automated utility for pinging endpoints on your voip network. This utility generates pings of variable sizes at variable intervals and records the response to the pings.

Accessing Link Management	
Pulldown	
	
Shortcut // Icon	**Sidebar**
Ctrl + 2 // none	



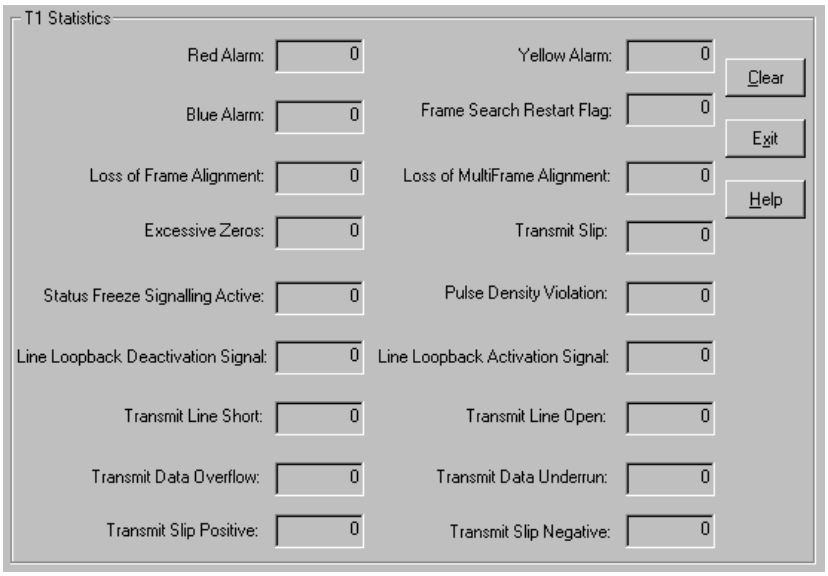
Link Management screen Field Definitions		
Field Name	**Values**	**Description**
Monitor Link fields		
IP Address to Ping	a.b.c.d 0-255	This is the IP address of the target endpoint to be pinged.
Pings per Test	1-999	This field determines how many pings will be generated by the Start Now command.
Response Timeout	500 – 5000 milliseconds	The duration after which a ping will be considered to have failed.
Ping Size in Bytes	32 – 128 bytes	This field determines how long or large the ping will be.
Timer Interval between Pings	0 or 30 – 6000 minutes	This field determines how long of a wait there is between one ping and the next.
Start Now command button	--	Initiates pinging.
Clear command button	--	Erases ping parameters in Monitor Link field group and restores default values.
Link Status Parameters		These fields summarize the results of pinging.
IP Address column	a.b.c.d 0-255	Target of ping.
No. of Pings Sent	as listed	Number of pings sent to target endpoint.
No. of Pings Received	as listed	Number of pings received by target endpoint.
Round Trip Delay (Min/Max/ Avg)	as listed, in milliseconds	Displays how long it took from time ping was sent to time ping response was received.
Last Error	as listed	Indicates when last data error occurred.

About T1/E1 Statistics

Accessing T1/E1 Statistics	
Pulldown	**Icon**
	--
Shortcut	**Sidebar**
`Ctrl + 1`	

The **T1 Statistics** screen is only accessible/applicable for the TA2410 and the **E1 Statistics** screen is only accessible/applicable for the TA3010.

T1 Statistics Screen

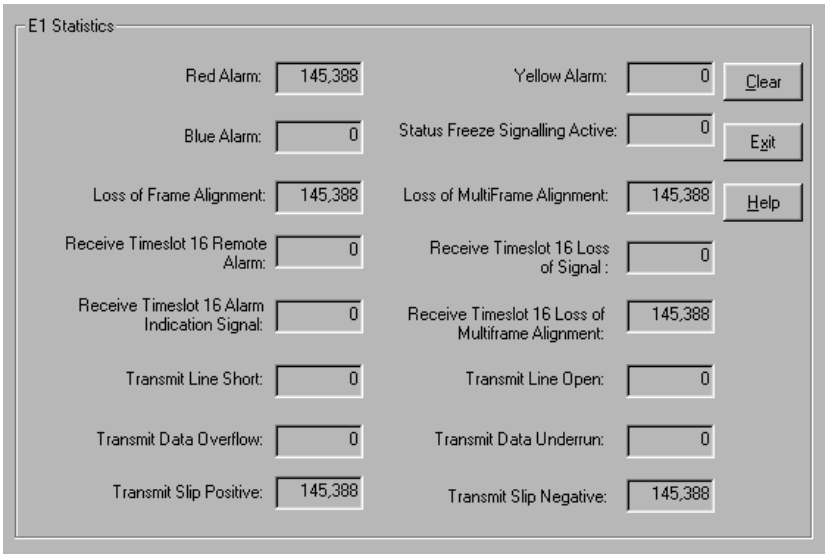


T1 Statistics: Field Definitions		
Field Name	**Values**	**Description**
Red Alarm	Integer tally of alarms counted since last reset.	The alarm condition declared when a device receives no signal or cannot synchronize to the signal being received. A Red Alarm is generated if the incoming data stream has no transitions for 176 consecutive pulse positions.
Blue Alarm	Tally since last reset.	Alarm signal consisting of all 1's (including framing bit positions) which indicates disconnection or failure of attached equipment.
Loss of Frame Alignment	Tally since last reset.	Loss of data frame synchronization.
Excessive Zeroes	Tally since last reset.	Displayed value will increment if consecutive zeroes beyond a set threshold are detected. I.e., tally increments if more than 7 consecutive zeroes in the received data stream are detected under B8ZS line coding, or if 15 consecutive zeroes are detected under AMI line coding.
Status Freeze Signaling Active		Signaling has been frozen at the most recent values due to loss of frame alignment, loss of multiframe alignment or due to a receive slip.
Line Loopback Deactivation Signal		Line loopback deactivation signal has been detected in the receive bit stream.
Transmit Line Short		A short exists between the transmit pair for at least 32 consecutive pulses.
Transmit Data Overflow		For use by MTS Technical Support personnel.
Transmit Slip Positive		The frequency of the transmit clock is less than the frequency of the transmit system interface working clock. A frame is repeated.

T1 Statistics: Field Definitions (cont'd)		
Field Name	**Values**	**Description**
Yellow Alarm	Tally since last reset.	The alarm signal sent by a remote T1/E1 device to indicate that it sees no receive signal or cannot synchronize on the receive signal.
Frame Search Restart Flag		[To be supplied.]
Loss of MultiFrame Alignment	Tally since last reset.	In D4 or ESF mode, displayed value will increment if multiframe alignment has been lost or if loss of frame alignment has been detected.
Transmit Slip	Tally since last reset.	Slip in transmitted data stream. Slips indicate a clocking mismatch (or lack of synchronization) between T1/E1 devices. When slips occur, data may be lost or repeated.
Pulse Density Violation		The pulse density of the received data stream is below the requirement defined by ANSI T1.403 or more than 15 consecutive zeros are detected.
Line Loopback Activation Signal		The line loopback activation signal has been detected in the received bit stream.
Transmit Line Open		At least 32 consecutive zeros were transmitted.
Transmit Data Underrun		For use by MTS Technical Support Personnel.
Transmit Slip Negative		The frequency of the transmit clock is greater than the frequency of the transmit system interface working clock. A frame is skipped.

T1 Statistics: Field Definitions (cont'd)		
Field Name	**Values**	**Description**
Bipolar Violation	Integer tally of violation count since last reset.	Two successive pulses of the same polarity have been received and these pulses are not part of zero substitution. On an AMI-encoded line, this represents a line error. On a B8ZS line, this may represent the substitution for a string of 8 zeroes.
Receive Slip	Tally since last reset.	A receive slip (positive or negative) has occurred. Slips indicate a clocking mismatch (or lack of synchronization) between T1/E1 devices. When slips occur, data may be lost or repeated.

E1 Statistics Screen


E1 Statistics
Red Alarm: 145,388
Yellow Alarm: 0
Clear
Blue Alarm: 0
Status Freeze Signalling Active: 0
Exit
Loss of Frame Alignment: 145,388
Loss of MultiFrame Alignment: 145,388
Help
Receive Timeslot 16 Remote Alarm: 0
Receive Timeslot 16 Loss of Signal : 0
Receive Timeslot 16 Alarm Indication Signal: 0
Receive Timeslot 16 Loss of Multiframe Alignment: 145,388
Transmit Line Short: 0
Transmit Line Open: 0
Transmit Data Overflow: 0
Transmit Data Underrun: 0
Transmit Slip Positive: 145,388
Transmit Slip Negative: 145,388

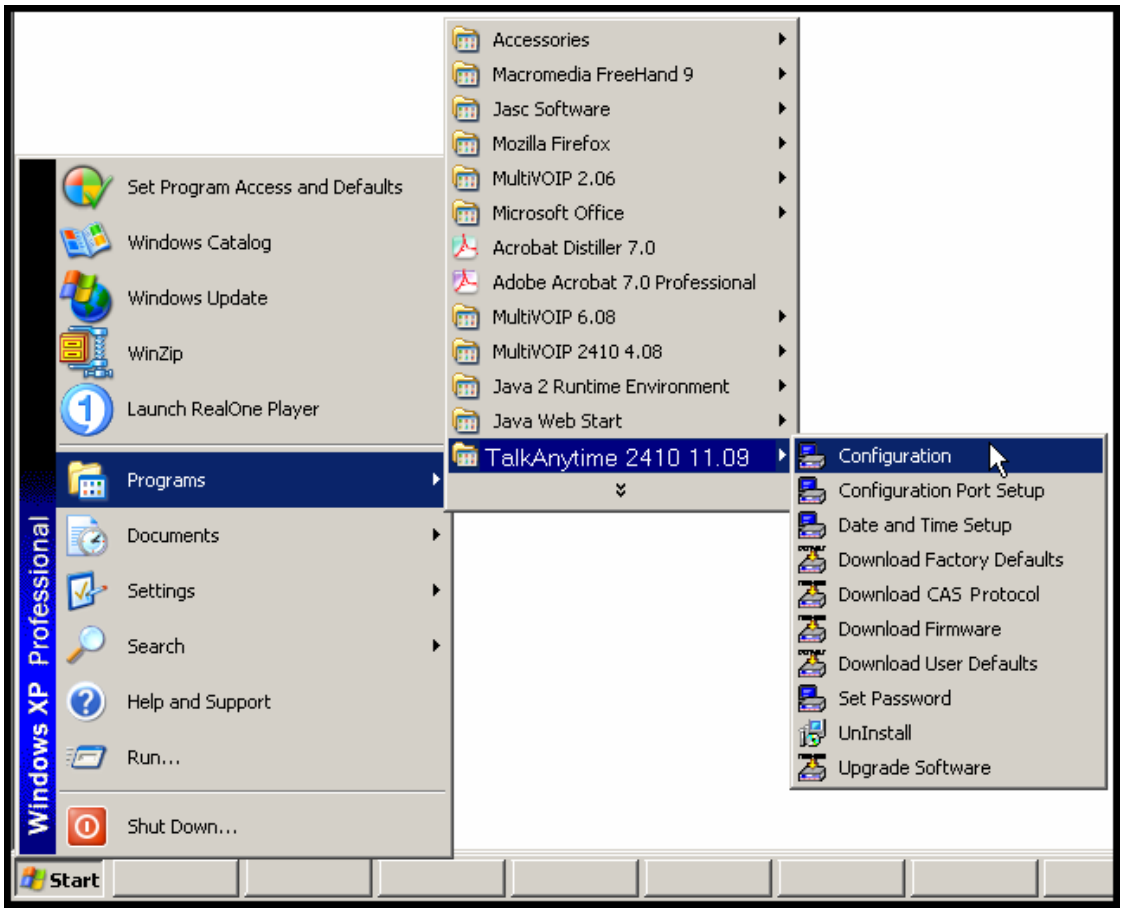
E1 Statistics: Field Definitions		
Field Name	**Values**	**Description**
Red Alarm	Integer tally of alarms counted since last reset.	The alarm condition declared when a device receives no signal or cannot synchronize to the signal being received. A Red Alarm is generated if the incoming data stream has no transitions for 176 consecutive pulse positions.
Blue Alarm	Tally since last reset.	Alarm signal consisting of all 1's (including framing bit positions) which indicates disconnection or failure of attached equipment.
Loss of Frame Alignment	Tally since last reset.	Loss of data frame synchronization.

E1 Statistics: Field Definitions (cont'd)		
Field Name	**Values**	**Description**
Receive Timeslot 16 Alarm Indication Signal		Detected alarm indication signal in timeslot 16 according to ITU-T G.775. Indicates the incoming time slot 16 contains less than 4 zeros in each of two consecutive time slot 16 multiframe periods.
Transmit Line Short		A short exists between the transmit pair for at least 32 consecutive pulses.
Transmit Data Overflow		For use by MTS personnel.
Transmit Slip Positive		The frequency of the transmit clock is less than the frequency of the transmit system interface working clock. A frame is repeated.
Yellow Alarm	Tally since last reset.	The alarm signal sent by a remote T1/E1 device to indicate that it sees no receive signal or cannot synchronize on the receive signal.
Status Freeze Signaling Active		Signaling has been frozen at the most recent values due to loss of frame alignment, loss of multiframe alignment or due to a receive slip.
Loss of MultiFrame Alignment	Tally since last reset.	In D4 or ESF mode, displayed value will increment if multiframe alignment has been lost or if loss of frame alignment has been detected.
Receive Timeslot 16 Loss of Signal		The time slot 16 data stream contains all zeros for at least 16 contiguously received time slots.

E1 Statistics: Field Definitions (cont'd)		
Field Name	**Values**	**Description**
Receive Timeslot 16 Loss of MultiFrame Alignment		The framing pattern '0000' in 2 consecutive CAS multiframes were not found or in all time slot 16 of the previous multiframe all bits were reset.
Transmit Line Open		At least 32 consecutive zeroes were transmitted.
Transmit Data Underrun		For use by MTS Technical Support Personnel.
Transmit Slip Negative		The frequency of the transmit clock is greater than the frequency of the transmit system interface working clock. A frame is skipped.
Bipolar Violation	Integer tally of violation count since last reset.	Bipolar Violation (or BPV) refers to two successive pulses of the same polarity on the E1 line. On an AMI-encoded line, this represents a line error. On a B8ZS line, this may represent the substitution for a string of 8 zeroes.
Excessive Zeroes	Tally since last reset.	Displayed value will increment if consecutive zeroes beyond a set threshold are detected. I.e., tally increments if more than 7 consecutive zeroes in the received data stream are detected under B8ZS line coding, or if 15 consecutive zeroes are detected under AMI line coding.
Transmit Slip	Tally since last reset.	Slip in transmitted data stream. Slips indicate a clocking mismatch (or lack of synchronization) between T1/E1 devices. When slips occur, data may be lost or repeated.
Receive Slip	Tally since last reset.	Slip in received data stream. Slips indicate a clocking mismatch (or lack of synchronization) between T1/E1 devices. When slips occur, data may be lost or repeated.

TalkAnytime Program Menu Items

After the TalkAnytime program is installed on the PC, it can be launched from the **Programs** group of the Windows **Start** menu (**Start** | **Programs** | **TalkAnytime** ____ | …). In this section, we describe the software functions available on this menu.



Several basic software functions are accessible from the TalkAnytime software menu, as shown below.

TalkAnytime Program Menu	
Menu Selection	**Description**
Configuration	Select this to enter the Configuration program where values for IP, telephony, and other parameters are set.
Configuration Port Setup	Select this to access the **COM Port Setup** screen of the TalkAnytime Configuration program.
Date and Time Setup	Select this for access to set calendar/clock used for data logging.

TalkAnytime Program Menu (cont'd)	
Menu Selection	**Description**
Download Factory Defaults	Select this to return the configuration parameters to the original factory values.
Download CAS Protocol	The CAS protocol code allows the digital TalkAnytime to interact properly with the PBX or central-office switch that it serves. The need to download CAS protocols arises for only a small minority of TalkAnytime administrators, and only when PBX/switch is found to be incompatible with standard protocols.
Download Firmware	Select this to download new versions of firmware as enhancements become available.
Download User Defaults	To be used after a full set of parameter values, values specified by the user, have been saved (using Save Setup). This command loads the saved user defaults into the TalkAnytime.
Set Password	Select this to create a password for access to the TalkAnytime software programs (**Program** group commands, Windows GUI, web browser GUI, & FTP server). Only the FTP Server function *requires* a password for access. The FTP Server function also requires that a username be established along with the password.
Uninstall	Select this to uninstall the TalkAnytime software (most, but not all components are removed from computer when this command is invoked).
Upgrade Software	Loads firmware (including H.323 stack) and settings from the controller PC to the TalkAnytime unit. User can choose whether to load Factory Default Settings or Current Configuration settings.

"Downloading" here refers to transferring program files from the PC to the nonvolatile "flash" memory of the TalkAnytime. Such transfers are made via the PC's serial port. This can be understood as a "download" from the perspective of the TalkAnytime unit.

When new versions of the TalkAnytime software become available, they will be posted on MultiTech's web or FTP sites. Although transferring updated program files from the MultiTech web/FTP site to the user's PC can generally be considered a download (from the perspective of the PC), this type of download cannot be initiated from the TalkAnytime software's Program menu command set.

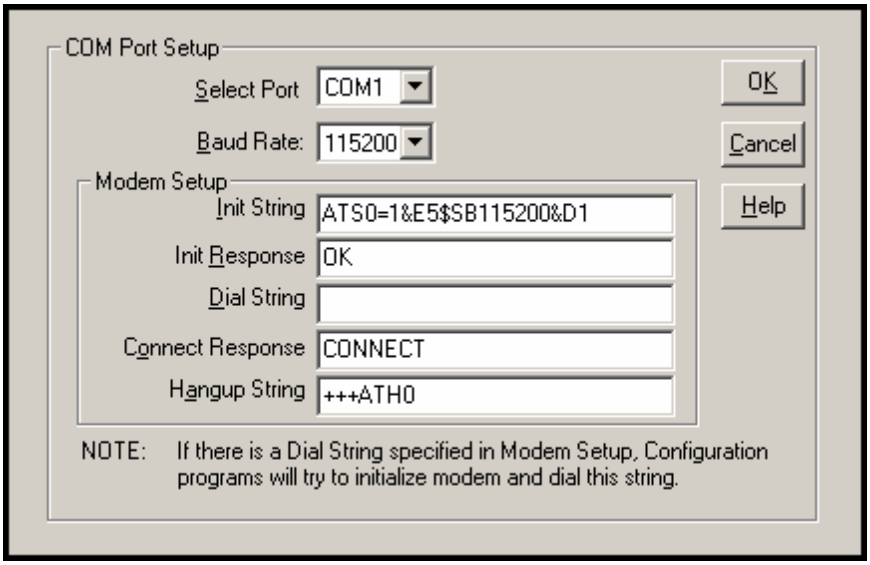
Generally, updated firmware must be downloaded from the MultiTech web/FTP site to the PC before it can be loaded from the PC to the TalkAnytime.

Configuration Option

The "Configuration" option in the TalkAnytime Program menu launches the TalkAnytime Configuration software program.

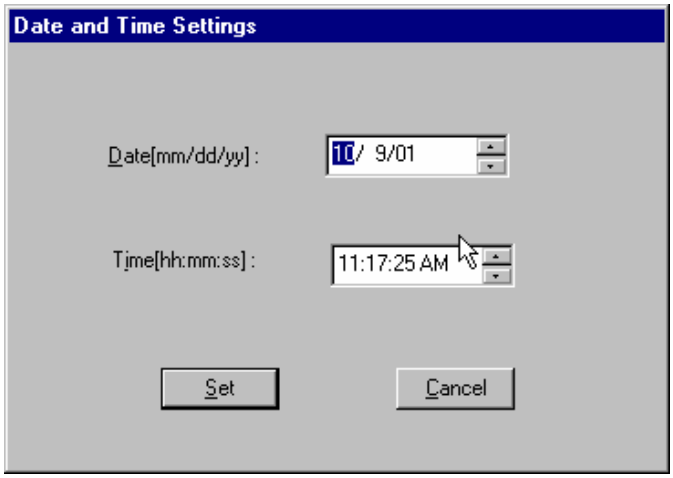
Configuration Port Setup

The Configuration Port Setup option in the TalkAnytime Program menu brings up the **COM Port Setup** screen of the TalkAnytime configuration software.



Date and Time Setup

The dialog box below allows you to set the time and date indicators of the TalkAnytime system.

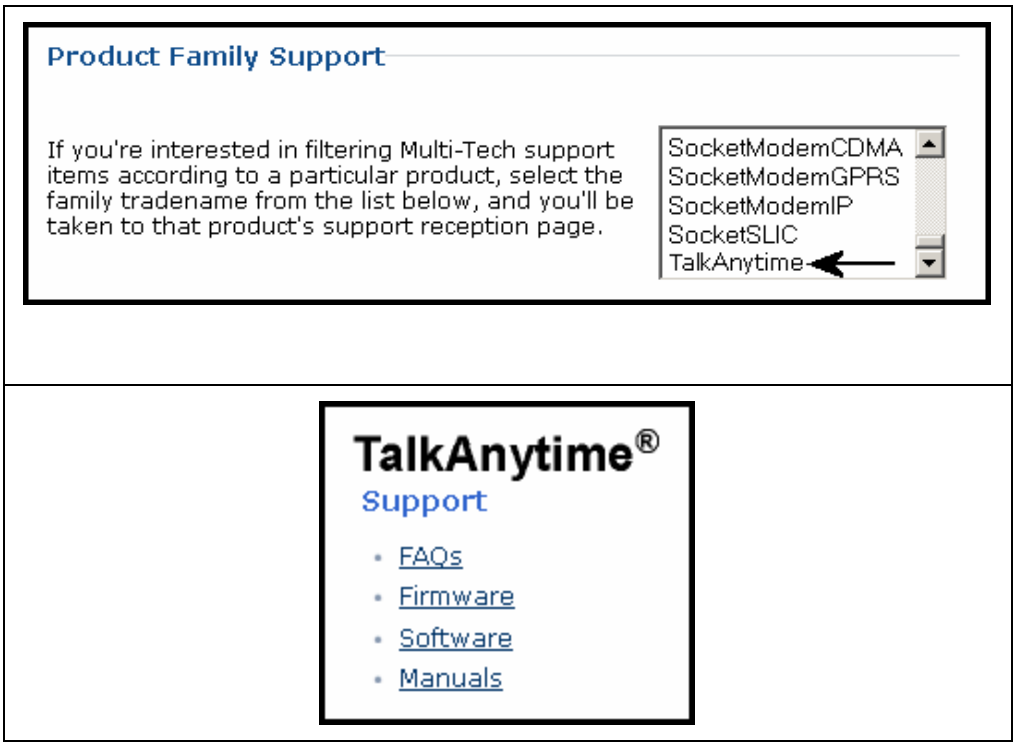


Obtaining Updated Firmware

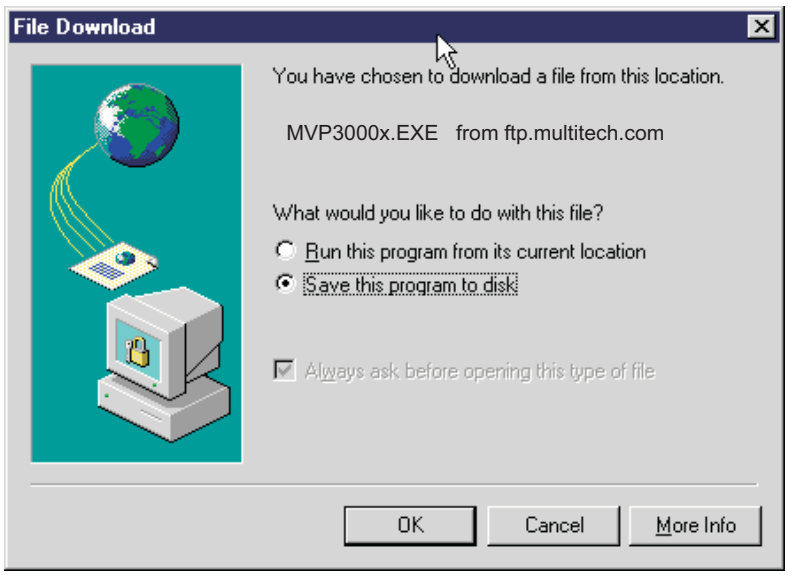
Generally, updated firmware must be downloaded from the MultiTech web/FTP site to the user's PC before it can be downloaded from that PC to the TalkAnytime.

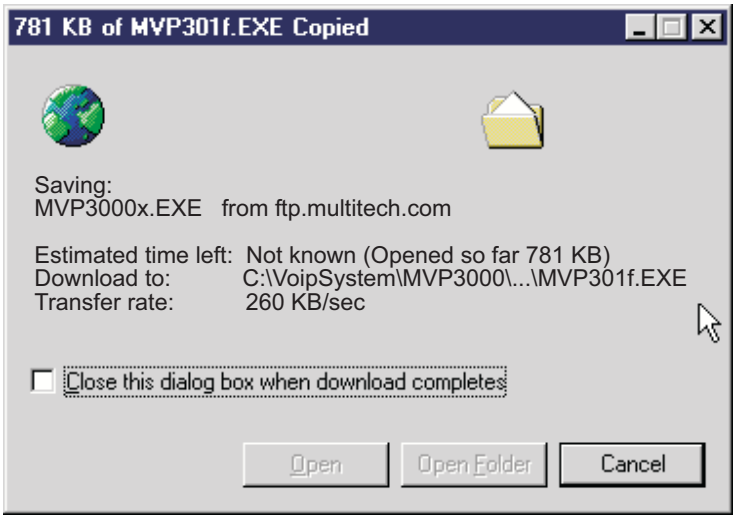
Note that the structure of the MultiTech web/FTP sites (www.multitech.com and ftp.multitech.com) may change without notice. However, firmware updates can generally be found using standard web techniques. For example, you can access updated firmware by doing a search or by clicking on **Support**.

If you choose **Support**, you can select "TalkAnytime" in the **Product Support** menu and then click on **Firmware** to find TalkAnytime resources.

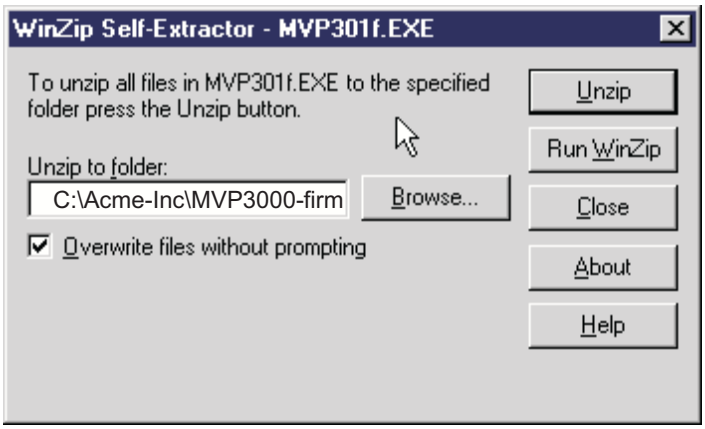


Once the updated firmware has been located, it can be downloaded from the web/ftp site using normal PC/Windows procedures. While the next 3 screens below pertain to the MVP3010 MultiVOIP which is closely related to the TalkAnytime, similar screens will appear for the TalkAnytime models described in this manual.


File Download
You have chosen to download a file from this location.
MVP3000x.EXE from ftp.multitech.com
What would you like to do with this file?
Run this program from its current location
Save this program to disk
Always ask before opening this type of file
OK
Cancel
More Info



Generally, the firmware file will be a self-extracting compressed file (with .zip extension), which must be expanded (decompressed, or "unzipped") on the user's PC in a user-specified directory.



Implementing a Software Upgrade

TalkAnytime software can be upgraded locally using a single command at the TalkAnytime Windows GUI, namely **Upgrade Software**. This command downloads firmware (including the H.323 stack), and factory default settings from the controller PC to the TalkAnytime unit.

When using the TalkAnytime Windows GUI, firmware and factory default settings can also be transferred from controller PC to TalkAnytime piecemeal using separate commands.

When using the TalkAnytime web browser GUI to control/configure the voip remotely, upgrading of software must be done on a piecemeal basis using the FTP Server function of the TalkAnytime unit.

When performing a piecemeal software upgrade (whether from the Windows GUI or web browser GUI), follow these steps in order:

1. Identify Current Firmware Version
2. Download Firmware
3. Download Factory Defaults

When upgrading firmware, the software commands "Download Firmware," and "Download Factory Defaults" must be implemented in order, else the upgrade is incomplete.

Identifying Current Firmware Version

Before implementing a TalkAnytime firmware upgrade, be sure to verify the firmware version currently loaded on it. The firmware version appears in the TalkAnytime Program menu. Go to **Start** | **Programs** | **TalkAnytime ____ x.xx**. The final expression, x.xx, is the firmware version number. In the illustration below, the firmware version is 10.08, made for the TalkAnytime TA410 or TA810. For TA-2410/3010, the first firmware version is 11.09 and subsequent versions increment as 11.xx (11.10, 11.11, etc.).

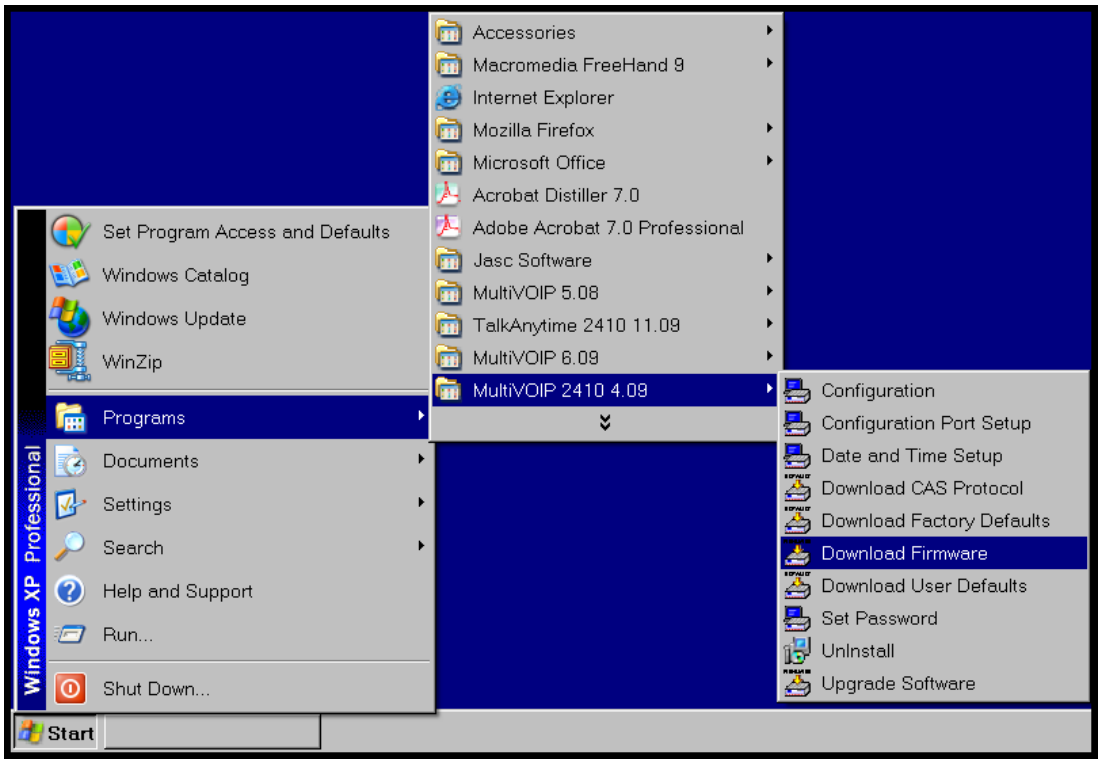
When a new firmware version is installed, the TalkAnytime software can be upgraded in one step using the **Upgrade Software** command, or piecemeal using the **Download Firmware** command and the **Download Factory Defaults** command.

Download Firmware transfers the firmware (including the H.323 protocol stack) in the PC's TalkAnytime directory into the nonvolatile flash memory of the TalkAnytime.
Download Factory Defaults sets all configuration parameters to the standard default values that are loaded at the MultiTech factory.
Upgrade Software implements both the **Download Firmware** command and the **Download Factory Defaults** command.

Downloading Firmware

In the series of illustrations below, the firmware version is 10.08, made for the TalkAnytime TA410 or TA810. For TA-2410/3010, the first firmware version is 11.09 and subsequent versions increment as 11.xx (11.10, 11.11, etc.), but the firmware downloading procedure is the same.

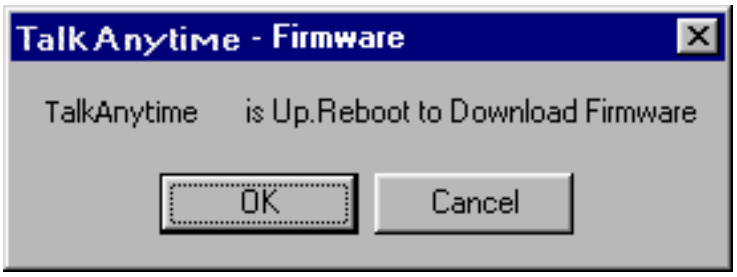
1. The TalkAnytime Configuration program must be off when invoking the **Download Firmware** command. If it is on, the command will not work.
2. To invoke the Download Firmware command, go to **Start** | **Programs** | **TalkAnytime____ x.xx** | **Download Firmware**.



3. If a password has been established, the **Password Verification** screen will appear.

Type in the password and click **OK**.

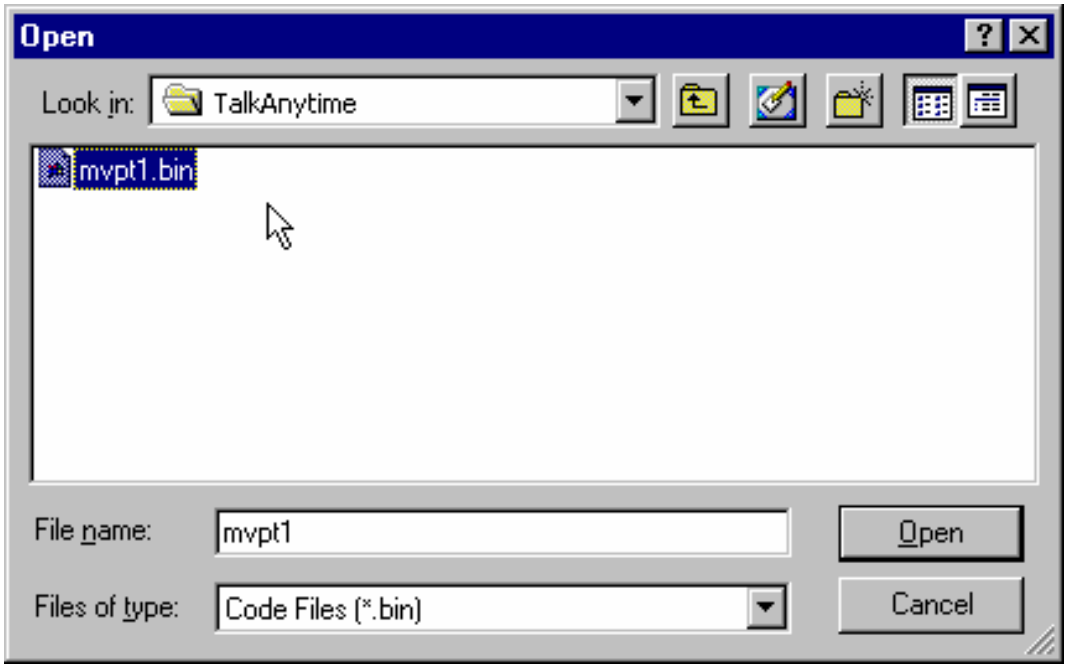
4. The **TalkAnytime ___- Firmware** screen appears saying "TalkAnytime [*model number*] is up. Reboot to Download Firmware?"



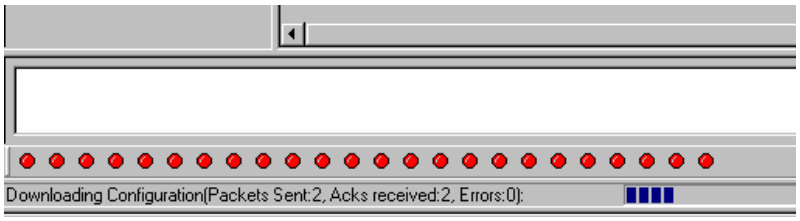
Click **OK** to download the firmware.

The "Boot" LED on the TalkAnytime will light up and remain lit during the file transfer process.

5. The program will locate the firmware ".bin" file in the TalkAnytime directory. Highlight the correct (newest) ".bin" file and click **Open**.



6. Progress bars will appear at the bottom of the screen during the file transfer.

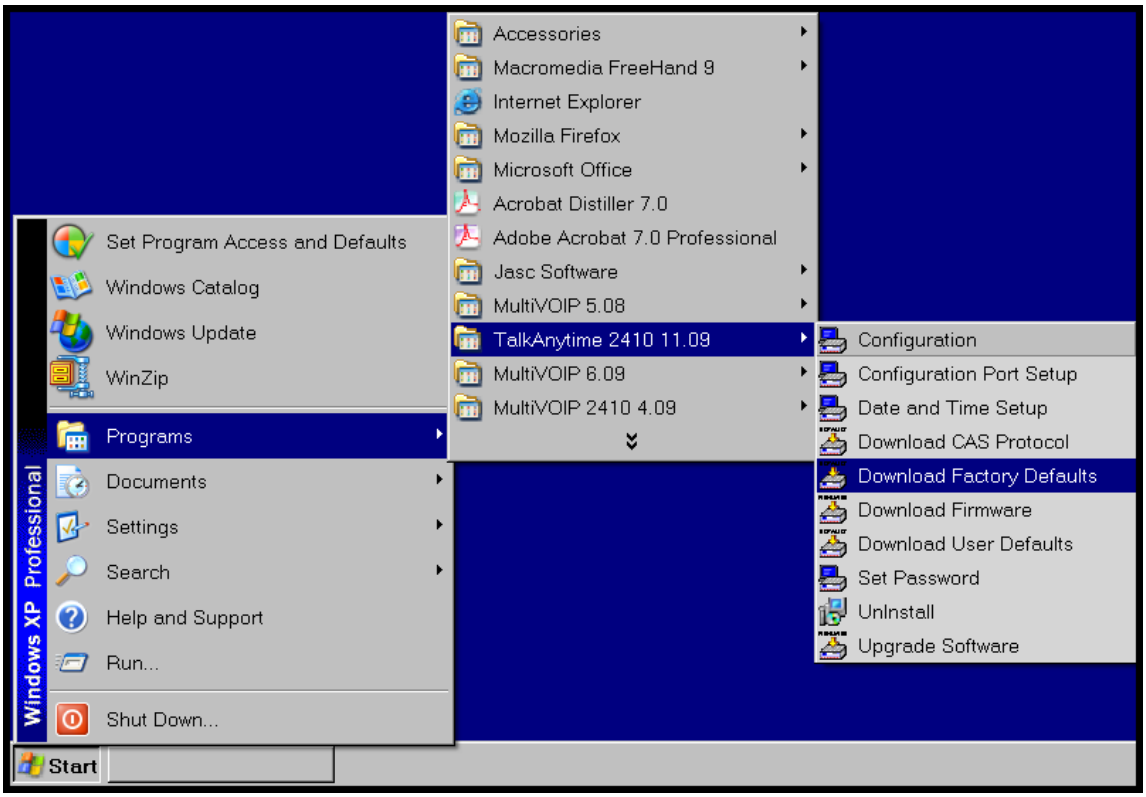


The TalkAnytime's "Boot" LED will turn off at the end of the transfer.

7. The **Download Firmware** procedure is complete.

Downloading Factory Defaults

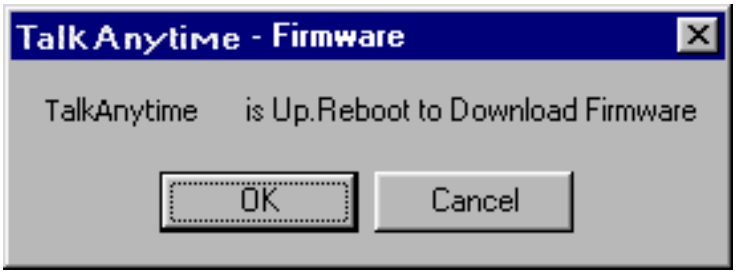
1. The TalkAnytime Configuration program must be off when invoking the **Download Factory Defaults** command. If it is on, the command will not work.
2. To invoke the **Download Factory Defaults** command, go to **Start** | **Programs** | **TalkAnytime____ x.xx** | **Download Factory Defaults**.



3. If a password has been established, the **Password Verification** screen will appear.

Type in the password and click **OK**.

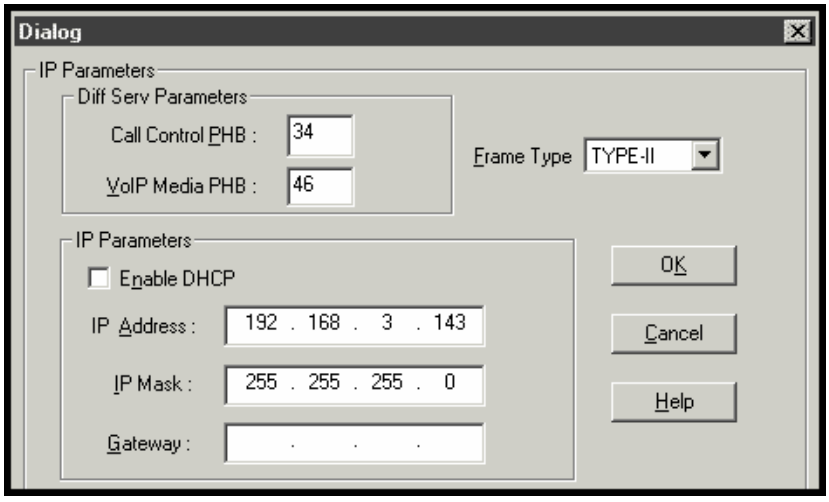
4. The **TalkAnytime____- Firmware** screen appears saying "TalkAnytime [*model number*] is up. Reboot to Download Firmware?"



Click **OK** to download the factory defaults.

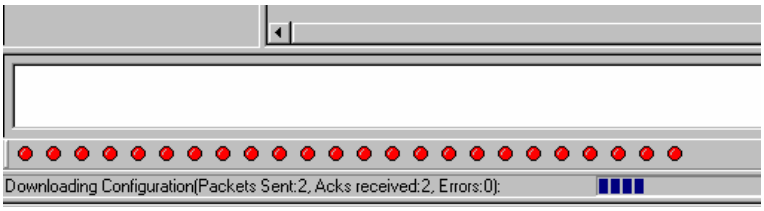
The "Boot" LED on the TalkAnytime will light up and remain lit during the file transfer process.

5. After the PC gets a response from the TalkAnytime, the **Dialog – IP Parameters** screen will appear.



The user should verify that the correct IP parameter values are listed on the screen and revise them if necessary. Then click **OK**.

6. Progress bars will appear at the bottom of the screen during the data transfer.



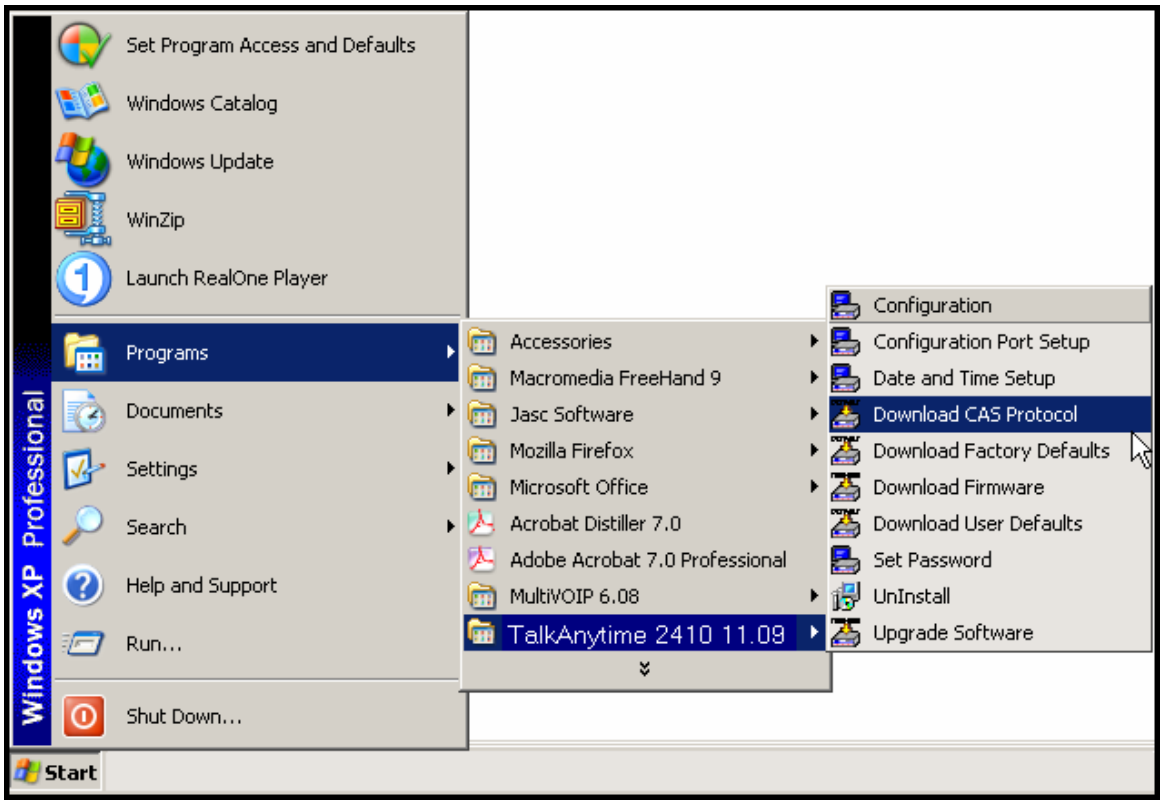
The TalkAnytime's "Boot" LED will turn off at the end of the transfer.

7. The **Download Factory Defaults** procedure is complete.

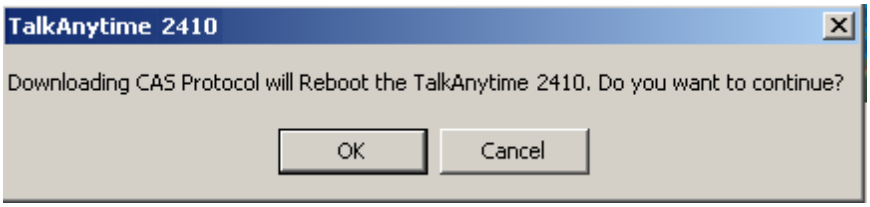
Downloading CAS Protocol

1. The TalkAnytime Configuration program must be off when invoking the **Download CAS Protocol** command.

2. To invoke the **Download CAS Protocol** command, go to **Start** | **Programs** | **TalkAnytime____ x.xx** | **Download CAS Protocol**.

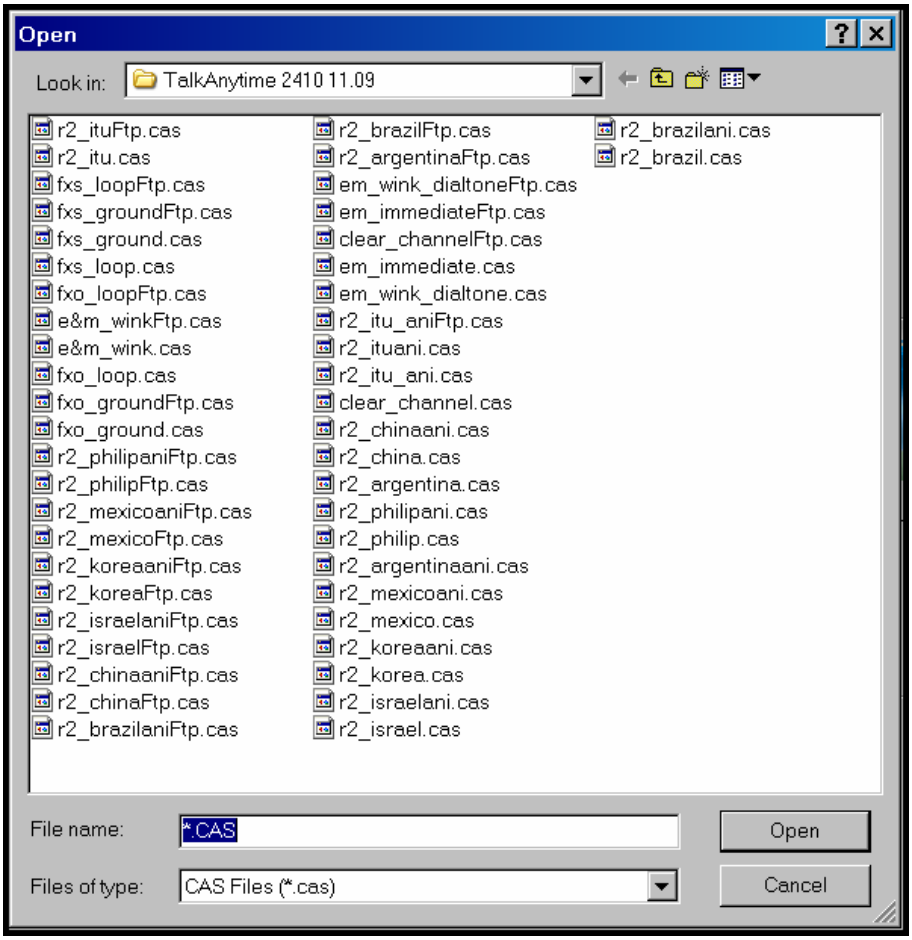


3. A message screen will appear warning that the download will entail a rebooting of the TalkAnytime.



Click **OK**.

4. The directory containing the CAS protocol files (extension is .cas) will appear.



Select the CAS protocol needed for your system. Click **Open**.

5. The chosen CAS protocol file will be loaded from the PC to the TalkAnytime unit. Progress bars will appear at the bottom of the screen while the download occurs. When the download is complete, the TalkAnytime will complete its rebooting process.

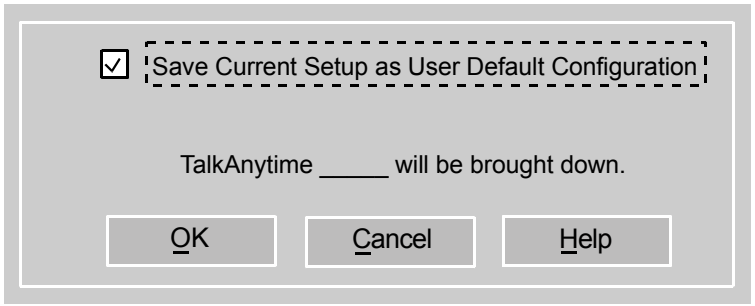
6. The TalkAnytime software will be closed when the download is complete. You will have to launch the TalkAnytime software again to continue using it.

Setting and Downloading User Defaults

The **Download User Defaults** command allows you to maintain a known working configuration that is specific to your TalkAnytime system. You can then experiment with alterations or improvements to the configurations confident that a working configuration can be restored if necessary.

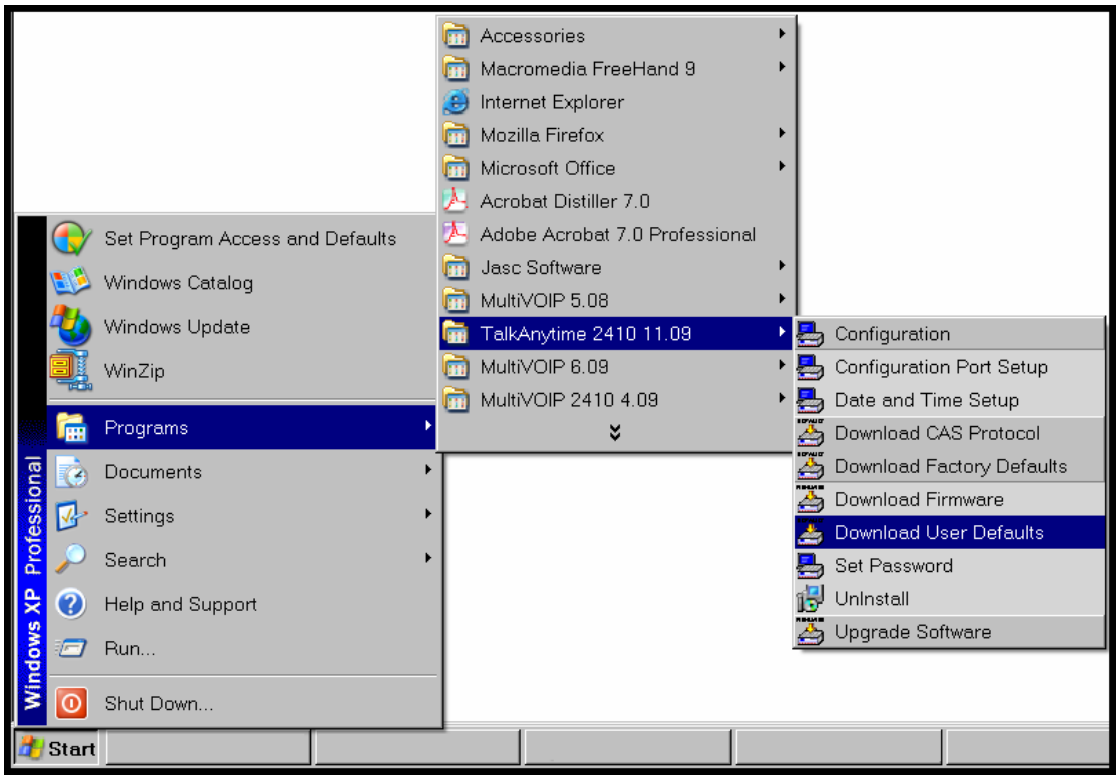
1. Before you can invoke the Download User Defaults command, you must first save a set of configuration parameters by using the **Save Setup** command in the sidebar menu of the TalkAnytime software.

2. Before the setup configuration is saved, you will be prompted to save the setup as the User Default Configuration. Select the checkbox and click **OK**.

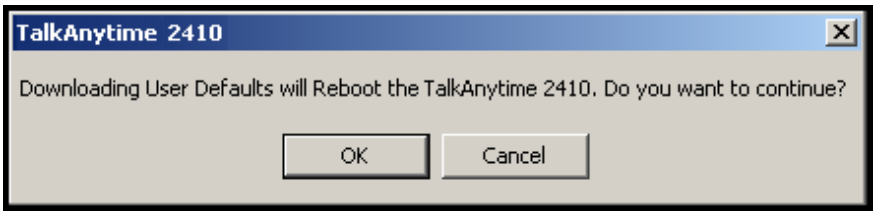


A user default file will be created. The TalkAnytime unit will reboot itself.

3. To download the user defaults, go to
Start | Programs | TalkAnytime xxx | Download User Defaults.

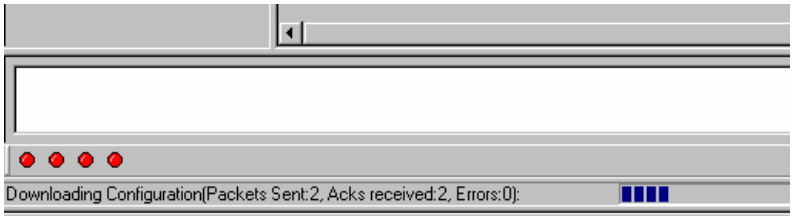


4. A confirmation screen will appear indicating that this action will entail rebooting the TalkAnytime.

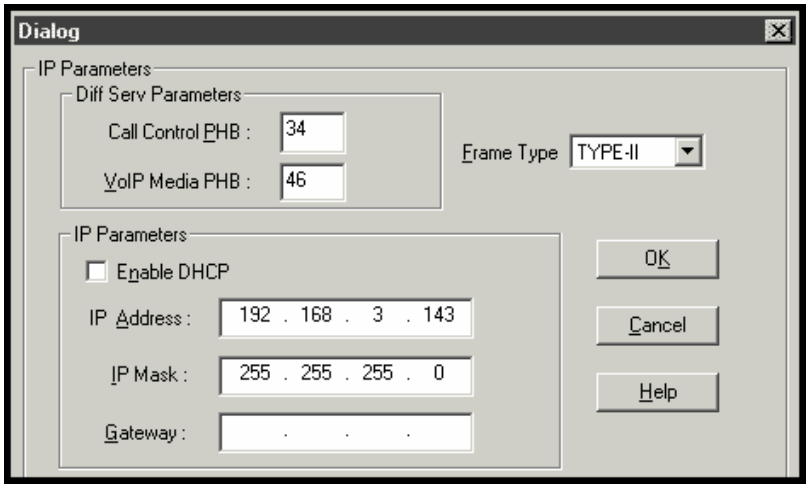


Click **OK**.

5. Progress bars will appear during the file transfer process.



6. When the file transfer process is complete, the **Dialog-- IP Parameters** screen will appear.



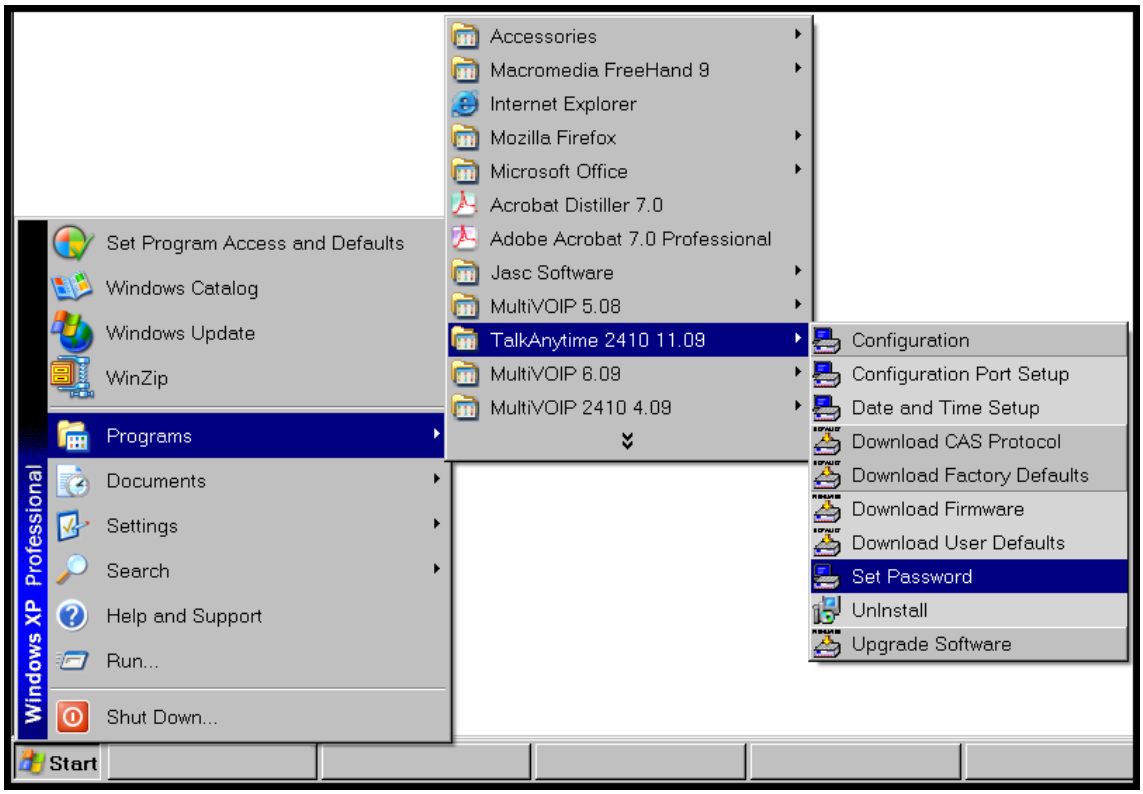
7. Set the IP values per your particular VOIP system. Click **OK**. Progress bars will appear as the TalkAnytime reboots itself.

Setting a Password (Windows GUI)

After a user name has been designated and a password has been set, that password is required to gain access to any functionality of the TalkAnytime software. Only one user name and password can be assigned to a voip unit. The user name will be required when communicating with the TalkAnytime via the web browser GUI.

NOTE: Record your user name and password in a safe place. If the password is lost, forgotten, or unretrievable, the user must contact MultiTech Tech Support in order to resume use of the TalkAnytime unit.

1. The TalkAnytime configuration program must be off when invoking the **Set Password** command. If it is on, the command will not work.
2. To invoke the **Set Password** command, go to **Start** | **Programs** | **TalkAnytime____ x.xx** | **Set Password**.

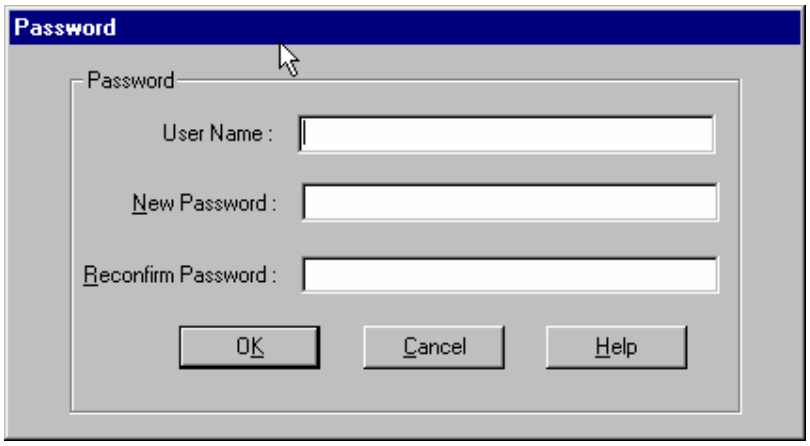


3. You will be prompted to confirm that you want to establish a password, which will entail rebooting the TalkAnytime (which is done automatically).

Click **OK** to proceed with establishing a password.

4. The **Password** screen will appear. If you intend to use the FTP Server function that is built into the TalkAnytime, enter a user name. (A User Name is not needed to access the local Windows GUI, the web browser GUI, or the commands in the **Program** group.) Type your password in the **Password** field of the **Password** screen. Type this same password again in the **Confirm Password** field to verify the password you have chosen.

NOTE: Be sure to write down your password in a convenient but secure place. If the password is forgotten, contact MultiTech Technical Support for advice.



Click **OK**.

5. A message will appear indicating that a password has been set successfully.

After the password has been set successfully, the TalkAnytime will re-boot itself and, in so doing, its **BOOT** LED will light up.

6. After the password has been set, the user will be required to enter the password to gain access to the web browser GUI and any part of the TalkAnytime software listed in the **Program** group menu. User Name and Password are both needed for access to the FTP Server residing in the TalkAnytime.

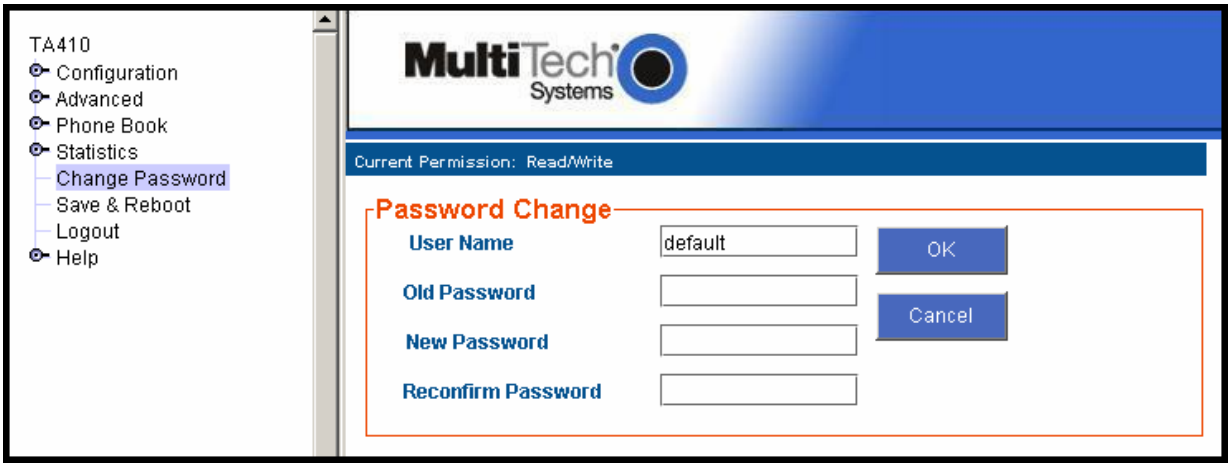
When TalkAnytime program asks for password at launch of program, the program will simply shut down if **CANCEL** is selected.

The TalkAnytime program will produce an error message if an invalid password is entered.

Setting a Password (Web Browser GUI)

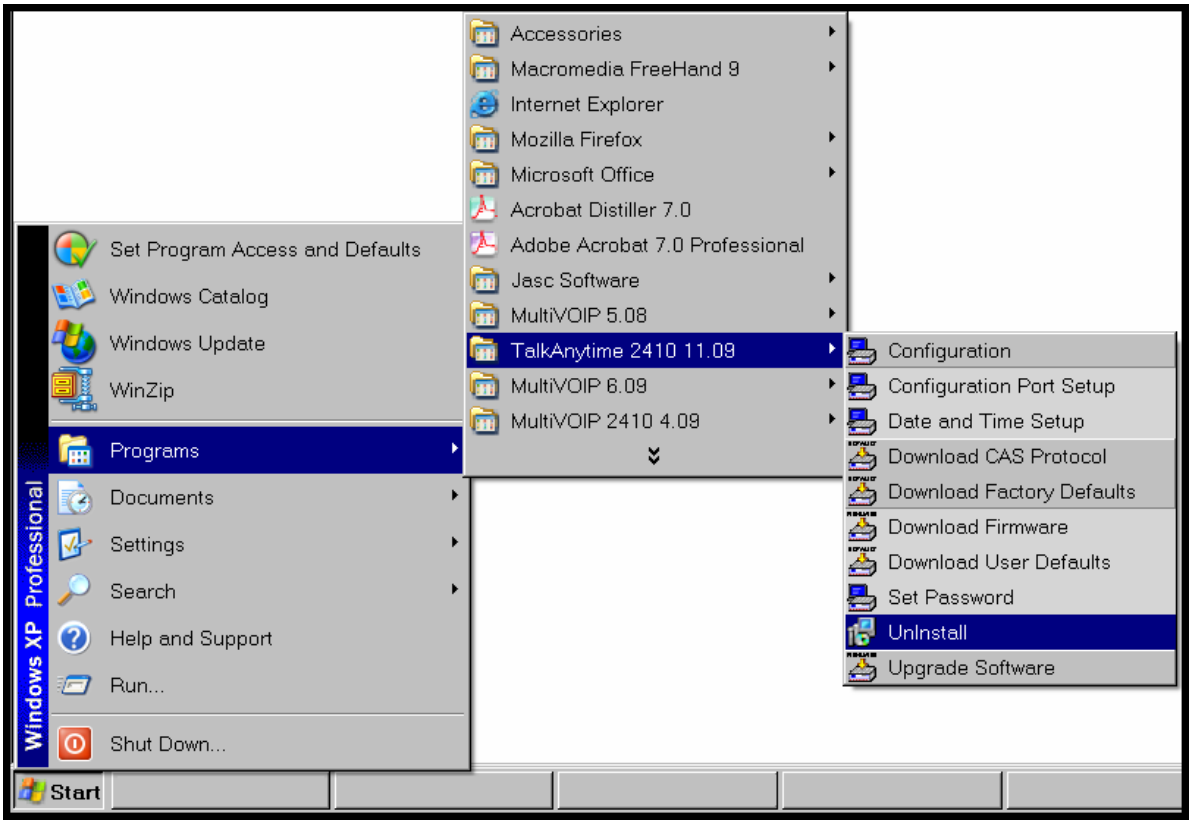
Setting a password is optional when using the TalkAnytime web browser GUI. Only one password can be assigned and it works for all TalkAnytime software functions (Windows GUI, web browser GUI, FTP server, and all Program menu commands, e.g., Upgrade Software – only the FTP Server function requires a User Name in addition to the password). After a password has been set, that password is required to access the TalkAnytime web browser GUI.

NOTE: Record your user name and password in a safe place. If the password is lost, forgotten, or unretrievable, the user must contact MultiTech Tech Support in order to resume use of the TalkAnytime web browser GUI.

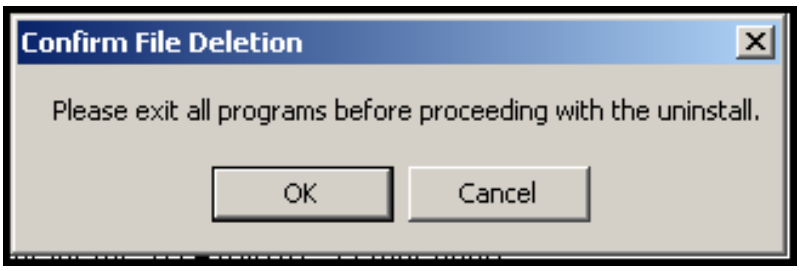


Un-Installing the TalkAnytime Software

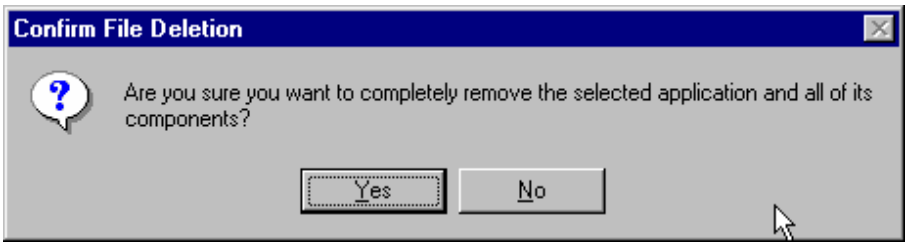
1. To un-install the TalkAnytime configuration software, go to **Start** | **Programs** and locate the entry for the TalkAnytime program. Select **Uninstall**.

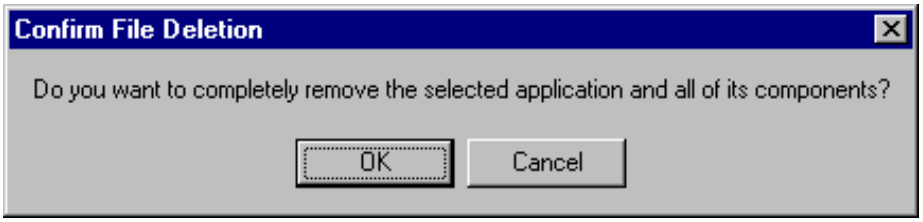


2. You will be asked to shut down other applications while uninstalling the TAT software.

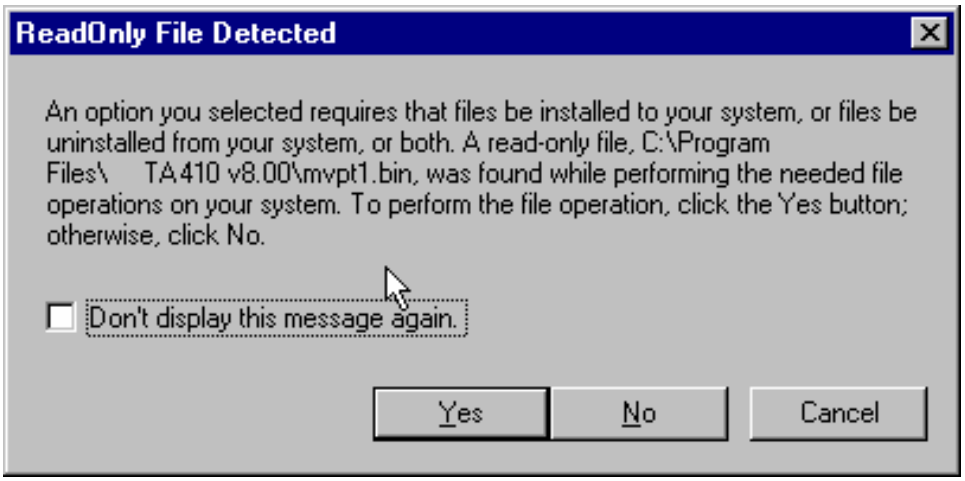


3. Two confirmation screens will appear. Click **Yes** and **OK** when you are certain you want to continue with the uninstallation process.

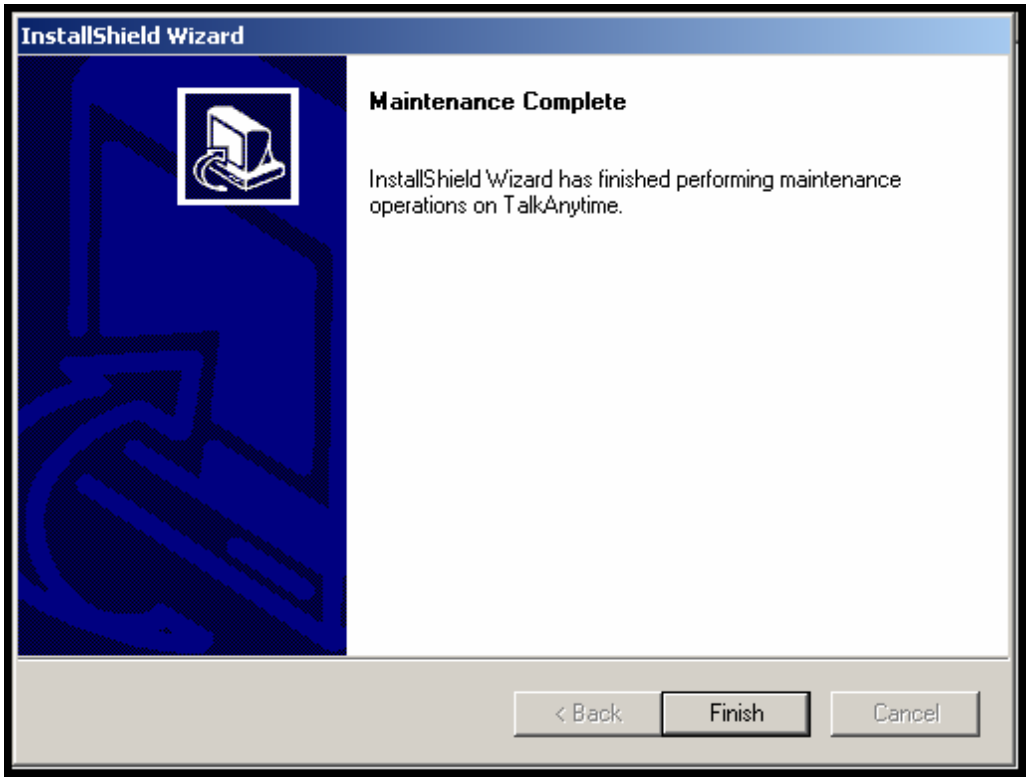

Confirm File Deletion
Are you sure you want to completely remove the selected application and all of its components?
Yes
No



4. A special warning message similar to that shown below may appear concerning the TalkAnytime software's ".bin" file. Click **Yes**.


ReadOnly File Detected
An option you selected requires that files be installed to your system, or files be uninstalled from your system, or both. A read-only file, C:\Program Files\ TA410 v8.00\mvpt1.bin, was found while performing the needed file operations on your system. To perform the file operation, click the Yes button; otherwise, click No.
Don't display this message again.
Yes
No
Cancel

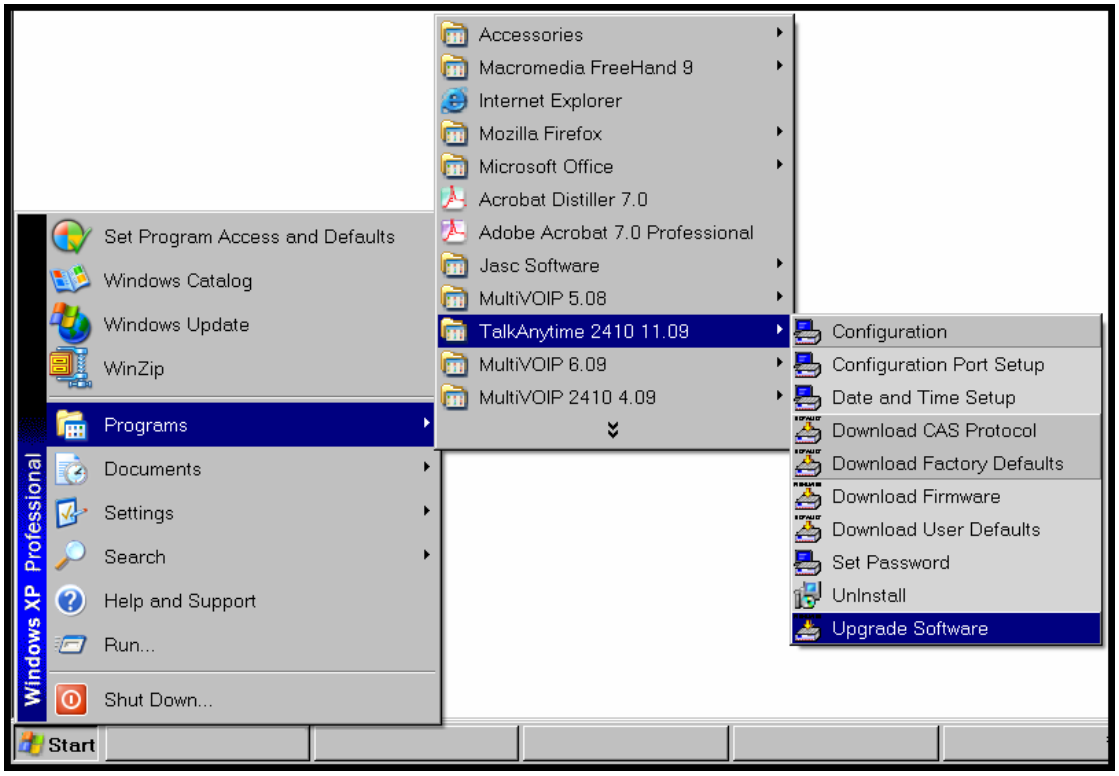
5. A completion screen will appear.



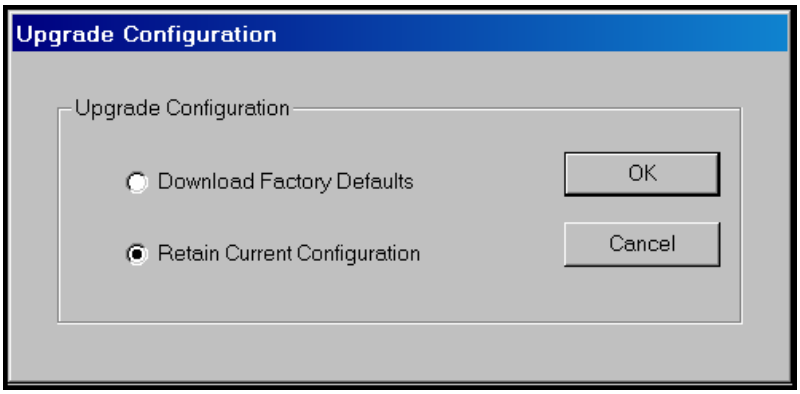
Click **Finish**.

Upgrading Software

As noted earlier (see the section *Implementing a Software Upgrade* above), the Upgrade Software command transfers, from the controller PC to the TalkAnytime unit, firmware and settings.



The settings can be either Factory Default Settings or Current Configuration Settings.



FTP Server File Transfers ("Downloads")

MultiTech has built an FTP server into the TalkAnytime unit. Therefore, file transfers from the controller PC to the TalkAnytime unit can be done using an FTP client program or even using a browser (e.g., Internet Explorer, Netscape, or FireFox, used in conjunction with Windows Explorer).

The terminology of "downloads" and "uploads" gets a bit confusing in this context. File transfers from a client to a server are typically considered "uploads." File transfers from a large repository of data to machines with less data capacity are considered "downloads." In this case, these metaphors are contradictory: the FTP server is actually housed in the TalkAnytime unit, and the controller PC, which is actually the repository of the info to be transferred, uses an FTP client program. In this situation, we have chosen to call the transfer of files from the PC to the voip "downloads." (Be aware that some FTP client programs may use the opposite terminology, i.e., they may refer to the file transfer as an "upload ")

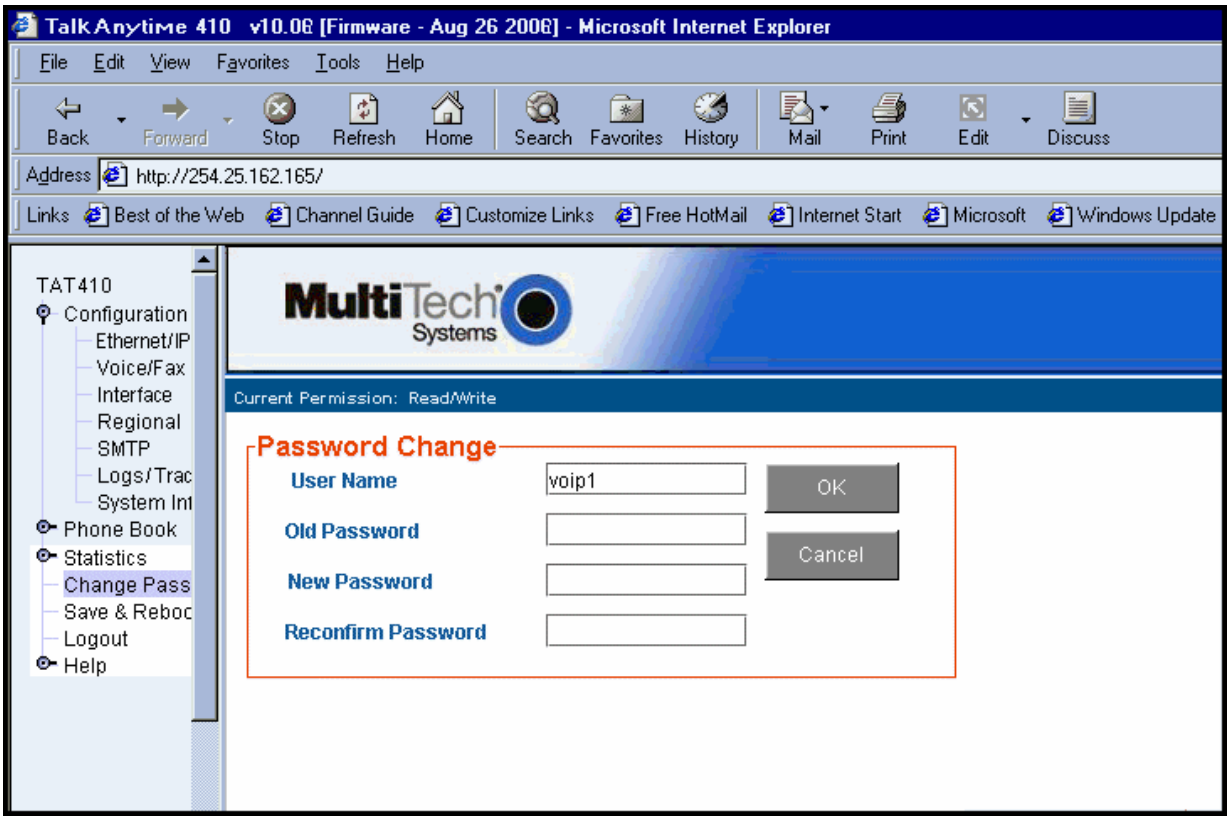
You can download firmware, CAS telephony protocols, default configuration parameters, and phonebook data for the TalkAnytime unit with this FTP functionality. These downloads are done over a network, not by a local serial port connection. Consequently, TalkAnytime units at distant locations can be updated from a central control point.

To transfer files using the FTP server functionality in the TalkAnytime unit, follow these directions.

1. **Establish Network Connection and IP Addresses**. Both the controller PC and the TalkAnytime unit(s) must be connected to the same IP network. An IP address must be assigned for each.

IP Address of Control PC	____ .	____ .	____ .	____
IP Address of TAT unit #1	____ .	____ .	____ .	____
:	:	:	:	:
IP address of TAT unit #n	____ .	____ .	____ .	____

2. **Establish User Name and Password**. You must establish a user name and (optionally) a password for contacting the TalkAnytime unit over the IP network. (When connection is made via a local serial connection between the PC and the TalkAnytime unit, no user name is needed.)

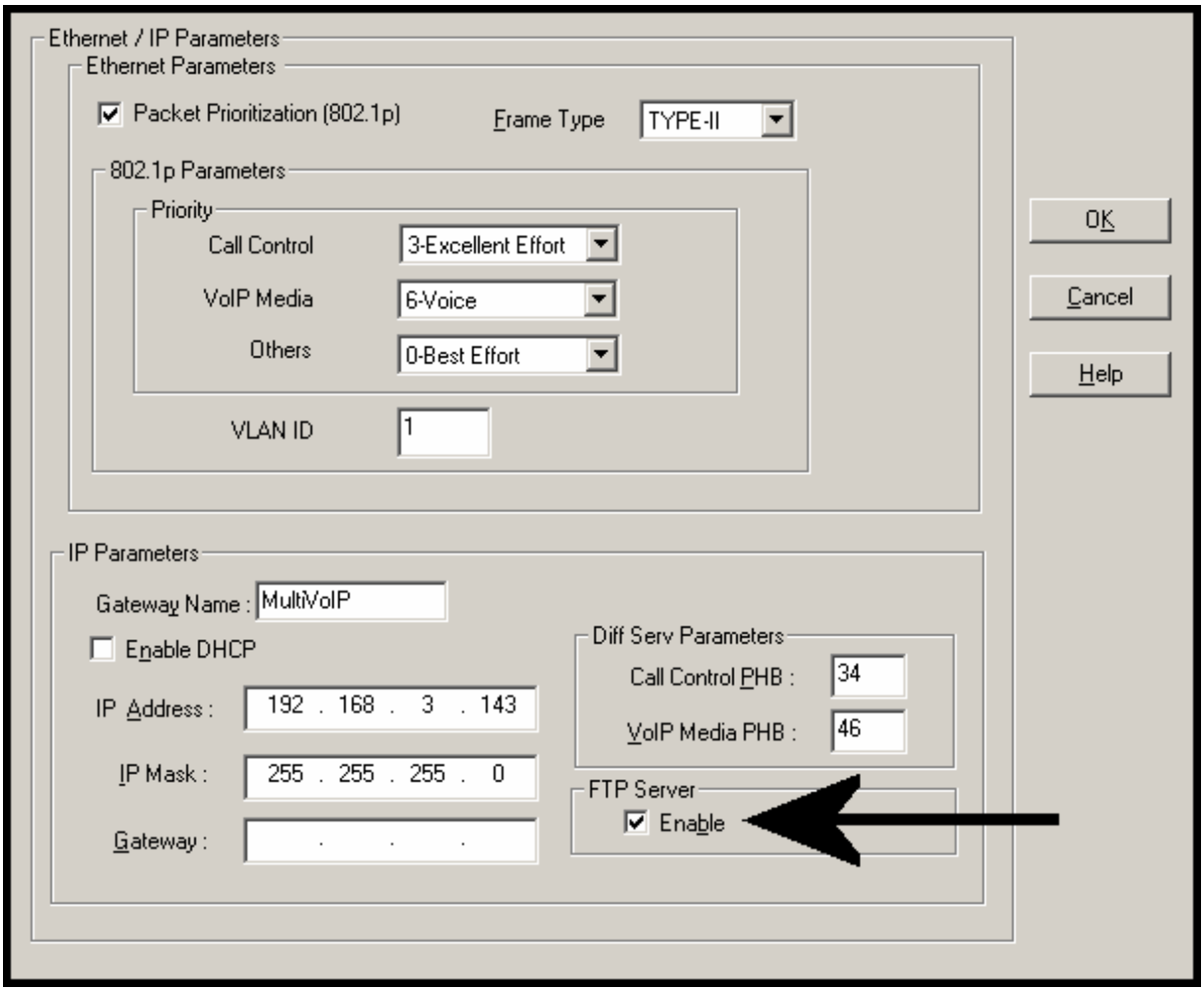


As shown above, the username and password can be set in the web GUI as well as in the Windows GUI.

3. **Install FTP Client Program or Use Substitute**. You *should* install an FTP client program on the controller PC. FTP file transfers can be done using a web browser (e.g., Netscape or Internet Explorer) in conjunction with a local Windows browser a (e.g., Windows Explorer), but this approach is somewhat clumsy (it requires use of two application programs rather than one) and it limits downloading to only one VOIP unit at a time. With an FTP client program, multiple voips can receive FTP file transmissions in response to a single command (the transfers may occur serially however).

Although MultiTech does not provide an FTP client program with the TalkAnytime software or endorse any particular FTP client program, we remind our readers that adequate FTP programs are readily available under retail, shareware and freeware licenses. (Read and observe any End-User License Agreement carefully.) Two examples of this are the "WSFTP" client and the "SmartFTP" client, with the former having an essentially text-based interface and the latter having a more graphically oriented interface, as of this writing. User preferences will vary. Examples here show use of both programs.

4. **Enable FTP Functionality**. Go to the **IP Parameters** screen and click on the "FTP Server: Enable" box.



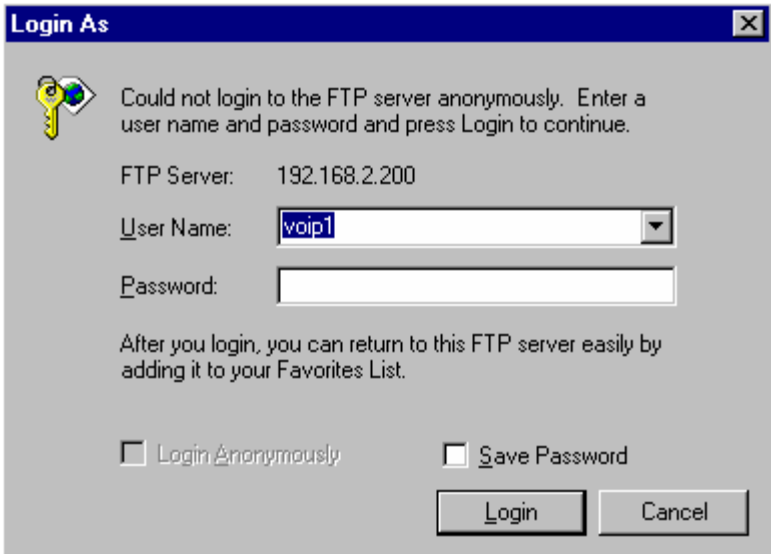
In order for the change to take effect, you must Save and Reboot the TalkAnytime unit.

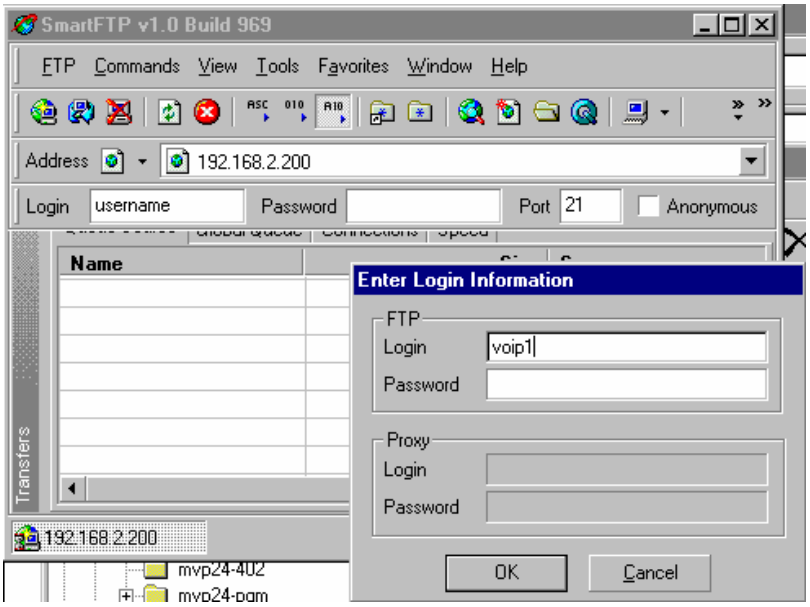
5. **Identify Files to be Updated**. Determine which files you want to update. Six types of files can be updated using the FTP feature. In some cases, the file to be transferred will have "Ftp" as the part of its filename just before the suffix (or extension). So, for example, the file "mvpt1Ftp.bin" can be transferred to update the bin file (firmware) residing in the TalkAnytime unit. Similarly, the file "fxo_loopFtp.cas" could be transferred to enable use of the FXO Loop Start telephony interface in one of the analog voip units and the file "r2_brazilFtp.cas" could be transferred to enable a particular telephony protocol used in Brazil. Note, however, that before any CAS file can be used as an update, it must be renamed to CASFILE.CAS so that it overwrites and replaces the default CAS file.

File Type	File Names	Description
firmware "bin" file	mvpt1Ftp.bin	This is the TalkAnytime firmware file. Only one file of this type will be in the directory.
factory defaults	fdefFtp.cnf	This file contains factory default settings for user-changeable configuration parameters. Only one file of this type will be in the directory.
CAS file	fxo_loopFtp.cas, em_winkFtp.cas, r2_brazilFtp.cas r2_chinaFtp.cas	These telephony files are for Channel Associated Signaling. The directory contains many CAS files, some labeled for specific functionality, others for countries or regions where certain attributes are standard. Any CAS file used must first be renamed to "CASFILE.CAS."
inbound phonebook	InPhBk.tmr	This file updates the inbound phonebook in the TalkAnytime unit.

6. **Contact TalkAnytime FTP Server**. You must make contact with the FTP Server in the TalkAnytime unit using either a web browser or FTP client program. Enter the IP address of the TalkAnytime's FTP Server. If you are using a browser, the address must be preceded by "ftp://" (otherwise you'll reach the web GUI within the TalkAnytime unit).

7. **Log In**. Use the User Name and password established in item #2 above. The login screens will differ depending on whether the FTP file transfer is to be done with a web browser (see first screen below) or with an FTP client program (see second screen below).


Login As
Could not login to the FTP server anonymously. Enter a user name and password and press Login to continue.
FTP Server: 192.168.2.200
User Name: voip1
Password:
After you login, you can return to this FTP server easily by adding it to your Favorites List.
Login Anonymously
Save Password
Login
Cancel

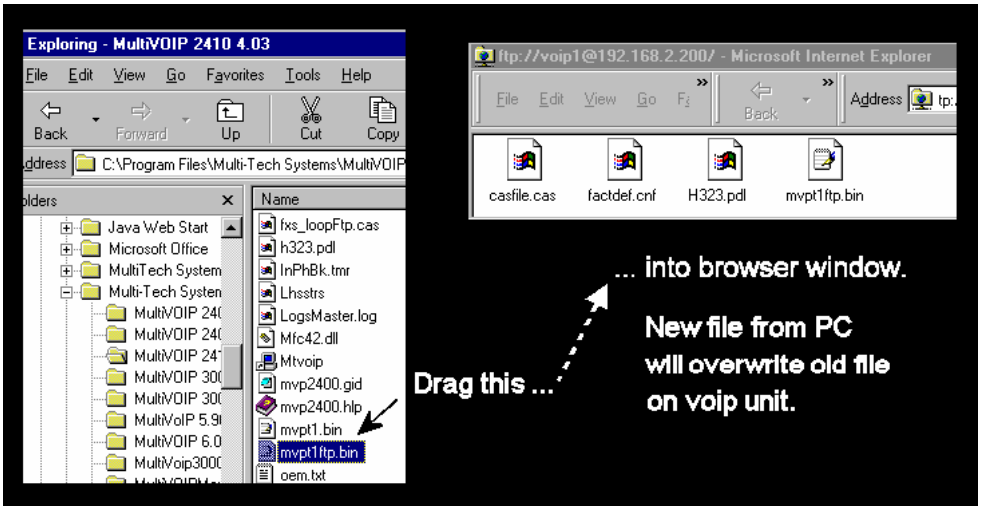


8. **Invoke Download**. Downloading can be done with a web browser or with an FTP client program.

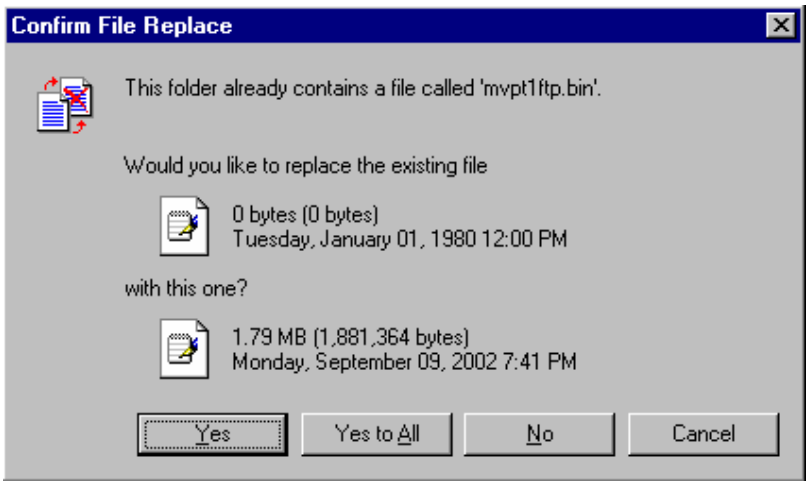
8A. Download with Web Browser.

8A1. In the local Windows browser, locate the directory holding the TalkAnytime program files. The default location will be C:\Program Files \Multi-Tech Systems \TalkAnytime xxxx yyyy (where x and y represent TalkAnytime model numbers and software version numbers).

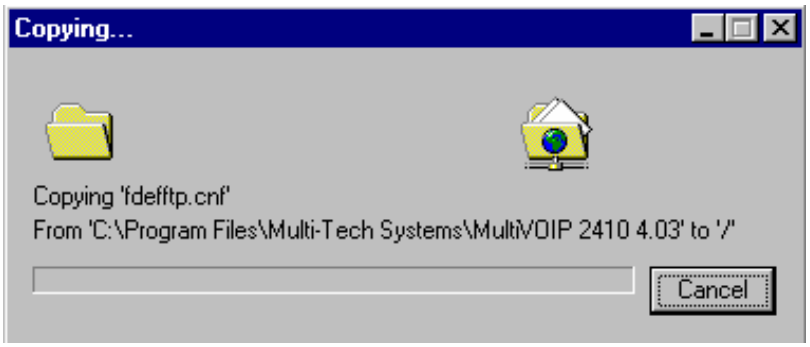
8A2. Drag-and-drop files from the local Windows browser (e.g., Windows Explorer) to the web browser.



You may be asked to confirm the overwriting of files on the TalkAnytime. Do so.


Confirm File Replace
This folder already contains a file called 'mvpt1ftp.bin'.
Would you like to replace the existing file
0 bytes (0 bytes)
Tuesday, January 01, 1980 12:00 PM
with this one?
1.79 MB (1,881,364 bytes)
Monday, September 09, 2002 7:41 PM
Yes
Yes to All
No
Cancel

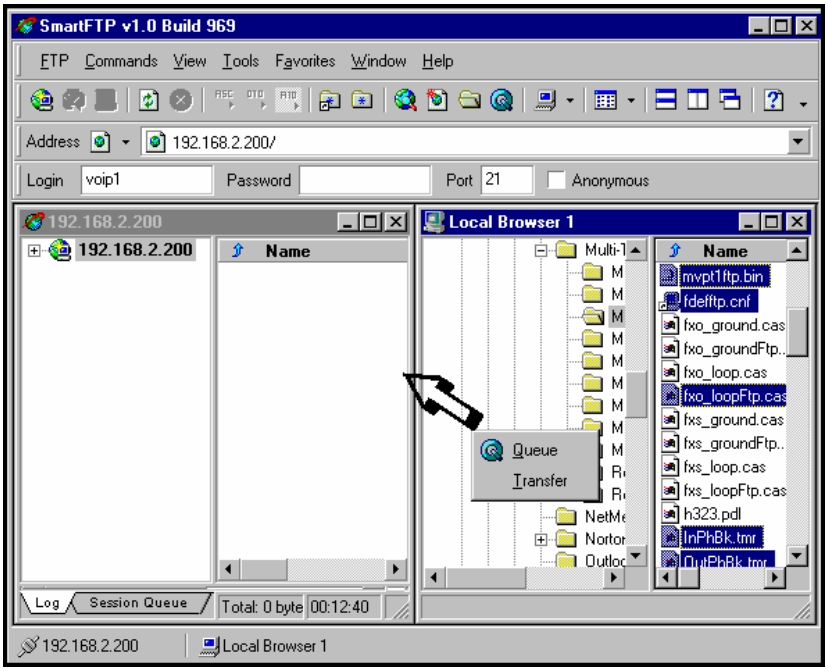
The file transfer between the PC and the TalkAnytime unit will look like a transfer within TalkAnytime directories and a screen similar to the one below will appear.



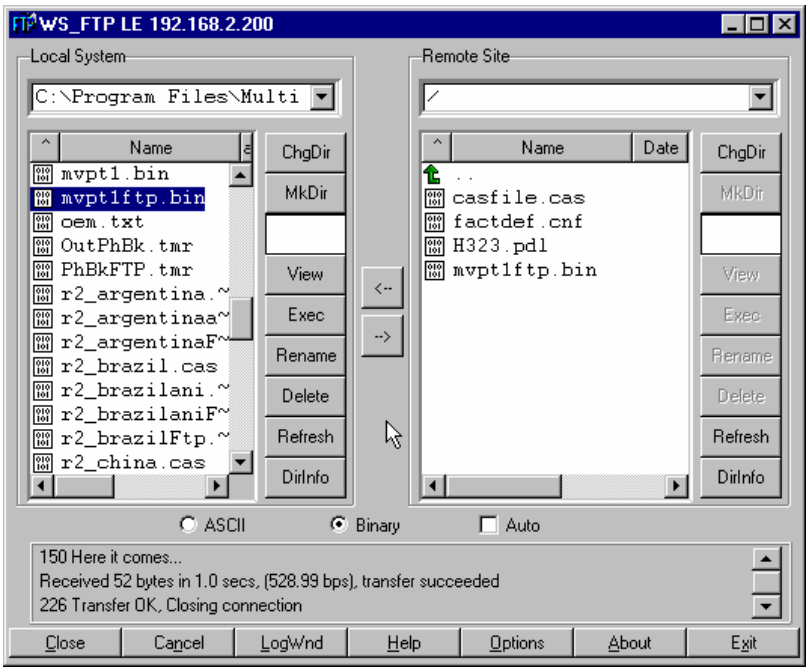
8B. Download with FTP Client Program.

8B1. In the local directory browser of the FTP client program, locate the directory holding the TalkAnytime program files. The default location will be C:\Program Files \Multi-Tech Systems \TalkAnytime xxxx yyyy (where x and y represent TalkAnytime model numbers and software version numbers).

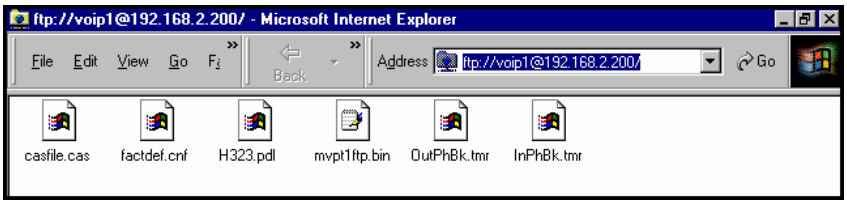
8B2. In the FTP client program window, drag-and-drop files from the local browser pane to the pane for the TalkAnytime FTP server. FTP client GUI operations vary. In some cases, you can choose between immediate and queued transfer. In some cases, there may be automated capabilities to transfer to multiple destinations with a single command.



Some FTP client programs are more graphically oriented (see previous screen), while others (like the "WS-FTP" client) are more text oriented.

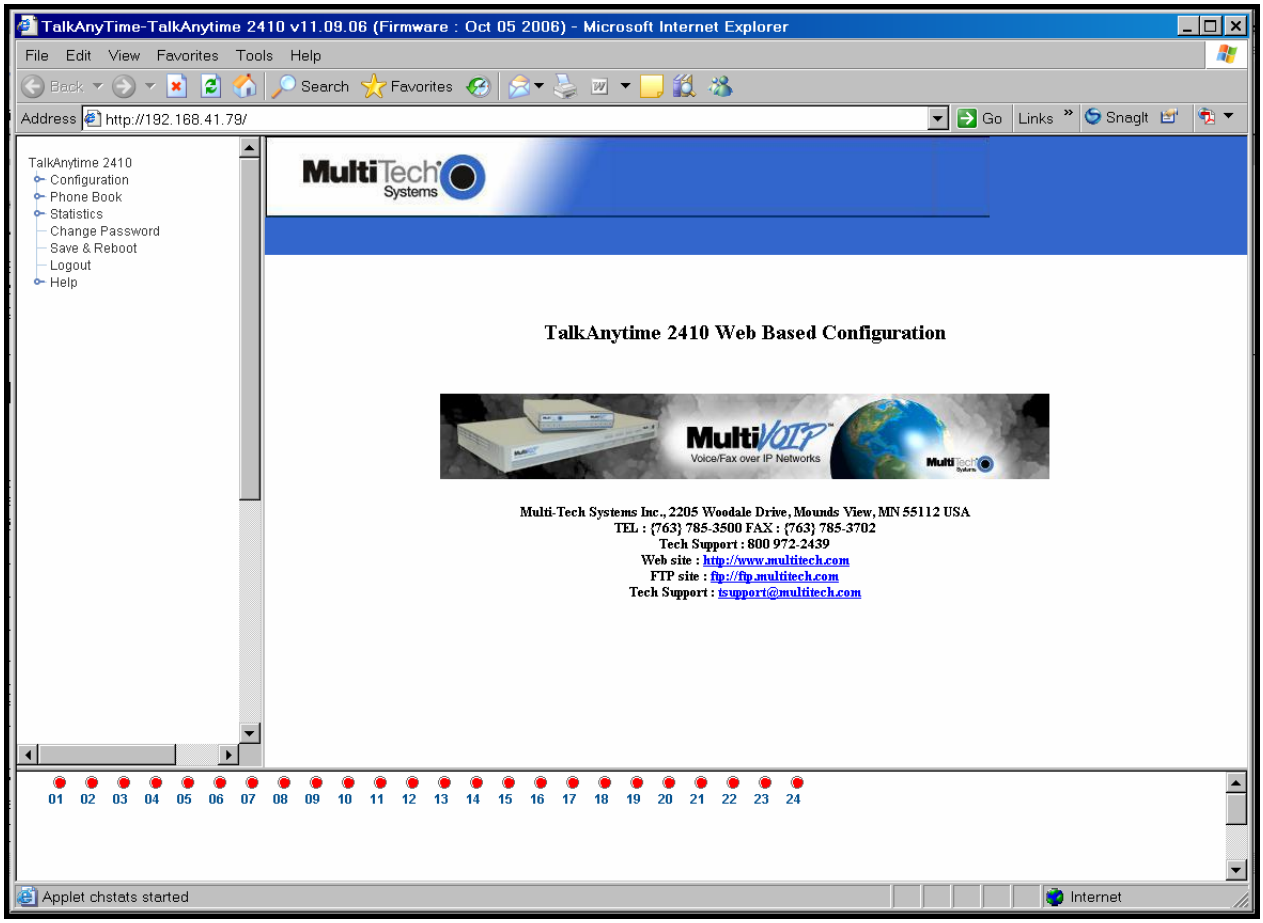


9. **Verify Transfer**. The files transferred will appear in the directory of the TalkAnytime.



10. **Log Out of FTP Session**. Whether the file transfer was done with a web browser or with an FTP client program, you *must* log out of the FTP session before opening the TalkAnytime Windows GUI.

Web Browser Interface


TalkAnyTime-TalkAnytime 2410 v11.09.06 (Firmware : Oct 05 2006) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://192.168.41.79/
TalkAnytime 2410
Configuration
Phone Book
Statistics
Change Password
Save & Reboot
Logout
Help
MultiTech Systems
TalkAnytime 2410 Web Based Configuration
MultiVOIP
Voice/Fax over IP Networks
Multi-Tech Systems Inc., 2205 Woodale Drive, Mounds View, MN 55112 USA
TEL : (763) 785-3500 FAX : (763) 785-3702
Tech Support : 800 972-2439
Web site : http://www.multitech.com
FTP site : ftp://ftp.multitech.com
Tech Support : tsupport@multitech.com
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Applet chstats started
Internet

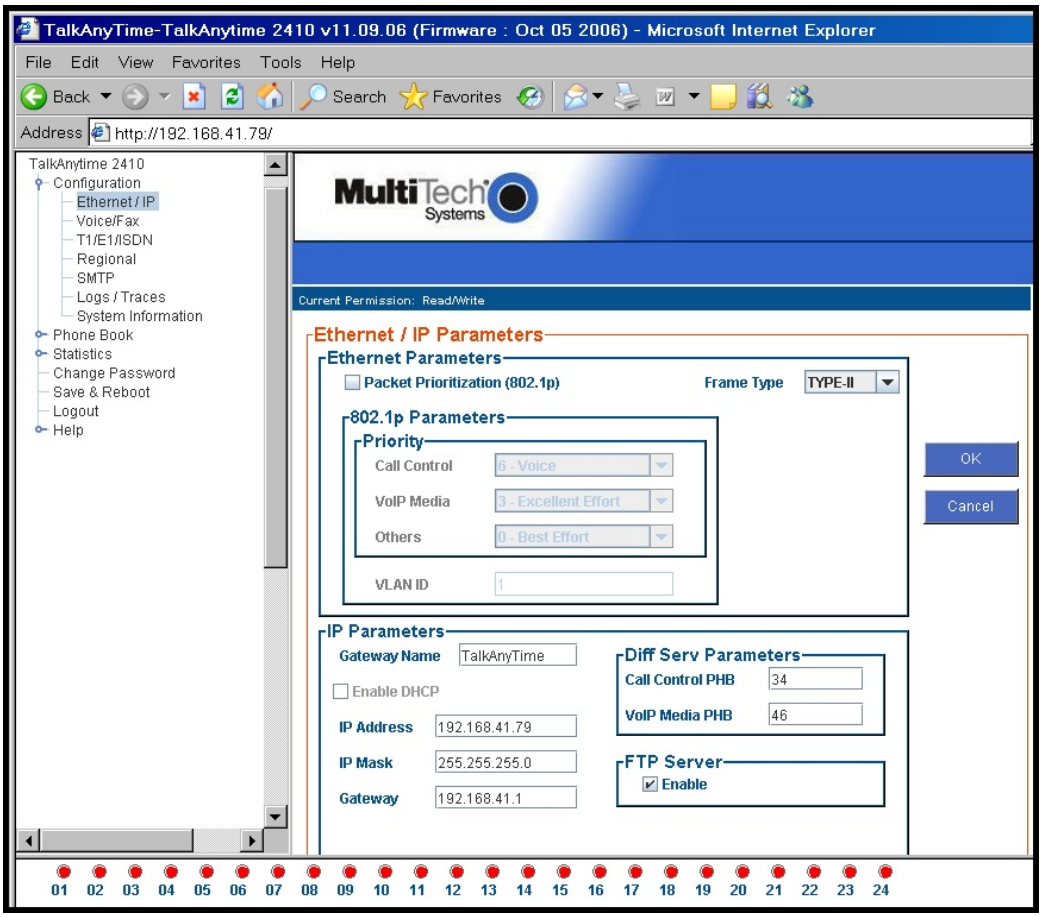
You can control the TalkAnytime unit with a graphic user interface (GUI) based on the common web browser platform. Qualifying browsers are InternetExplorer6, Netscape6, and Mozilla FireFox 1.0.

TalkAnytime Configuration Web Browser GUI Overview	
Function	Remote configuration and control of TalkAnytime units.
Configuration Prerequisite	Local Windows GUI must be used to assign IP address to TalkAnytime.
Browser Version Requirement	Internet Explorer 6.0 or higher; or Netscape 6.0 or higher; or Mozilla FireFox 1.0 or higher.
Java Requirement	Java Runtime Environment version 1.4.0_01 or higher (this application program is included with TalkAnytime)
Video Usability	large video monitor recommended

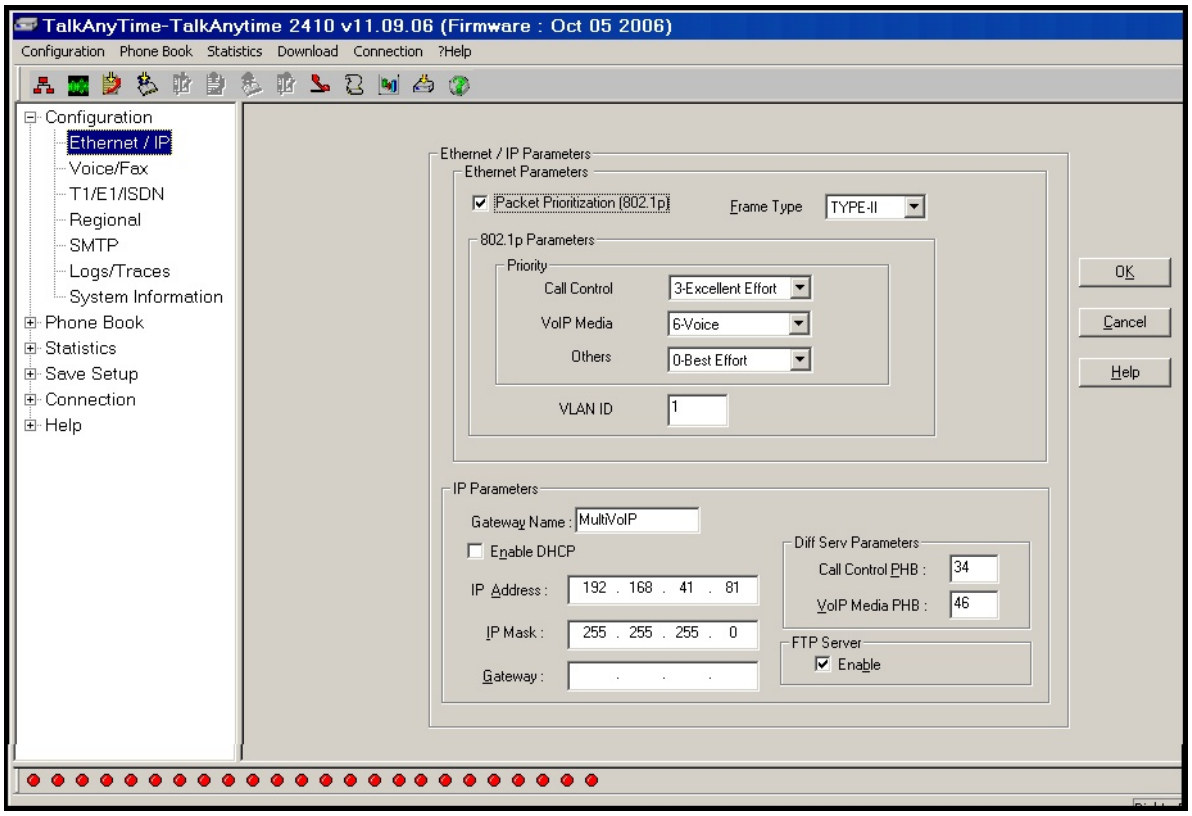
NOTE: The TalkAnytime Web GUI of the Configuration Program accommodates Mozilla Firefox. However, end-users cannot employ Mozilla Firefox to use TalkAnytime click-to-talk service.

The initial configuration step of assigning the voip unit an IP address must still be done locally using the Windows GUI. However, all additional configuration can be done via the web GUI.

The content and organization of the web GUI is directly parallel to the Windows GUI. For each screen in the Windows GUI, there is a corresponding screen in the web GUI. The fields on each screen are the same, as well.



The Windows GUI gives access to commands via icons and pulldown menus whereas the web GUI does not.



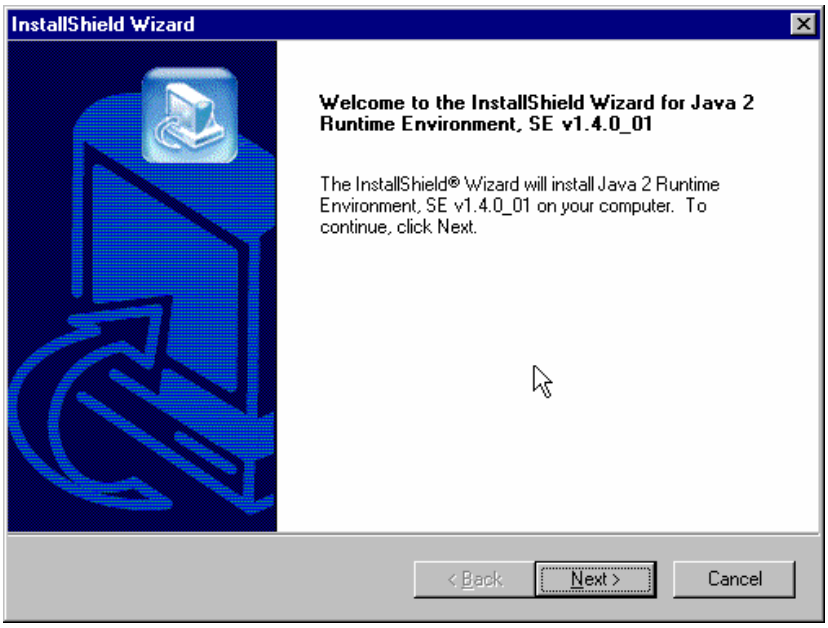
The web GUI, however, cannot perform logging in the same direct mode done in the Windows GUI. However, when the web GUI is used, logging can be done by email (SMTP).

The graphic layout of the web GUI is also somewhat larger-scale than that of the Windows GUI. For that reason, it's helpful to use as large of a video monitor as possible.

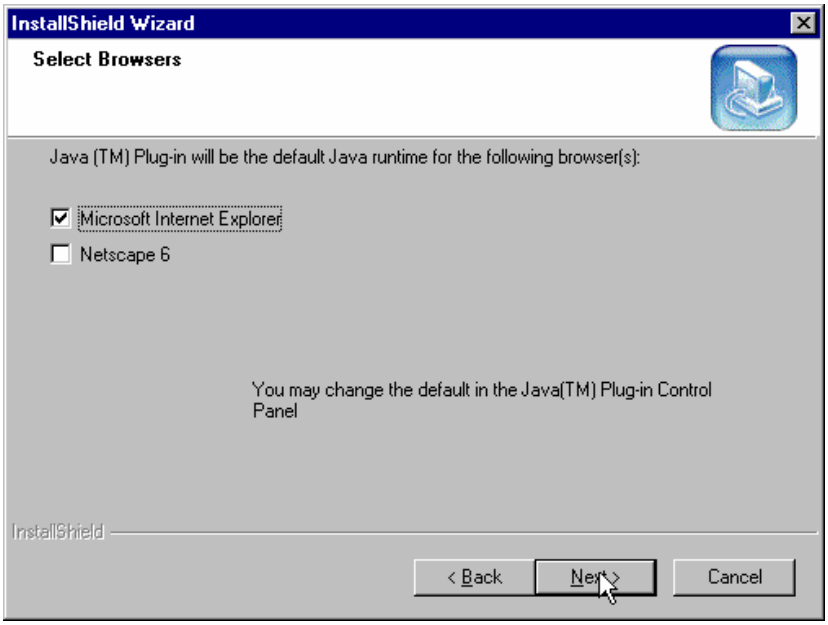
The primary advantage of the web GUI is remote access for control and configuration. The controller PC and the TalkAnytime unit itself must both be connected to the same IP network and their IP addresses must be known.

In order to use the web GUI, you must also install a Java application program on the controller PC. This Java program is included on the TalkAnytime product CD.). Java is needed to support drop-down menus and multiple windows in the web GUI.

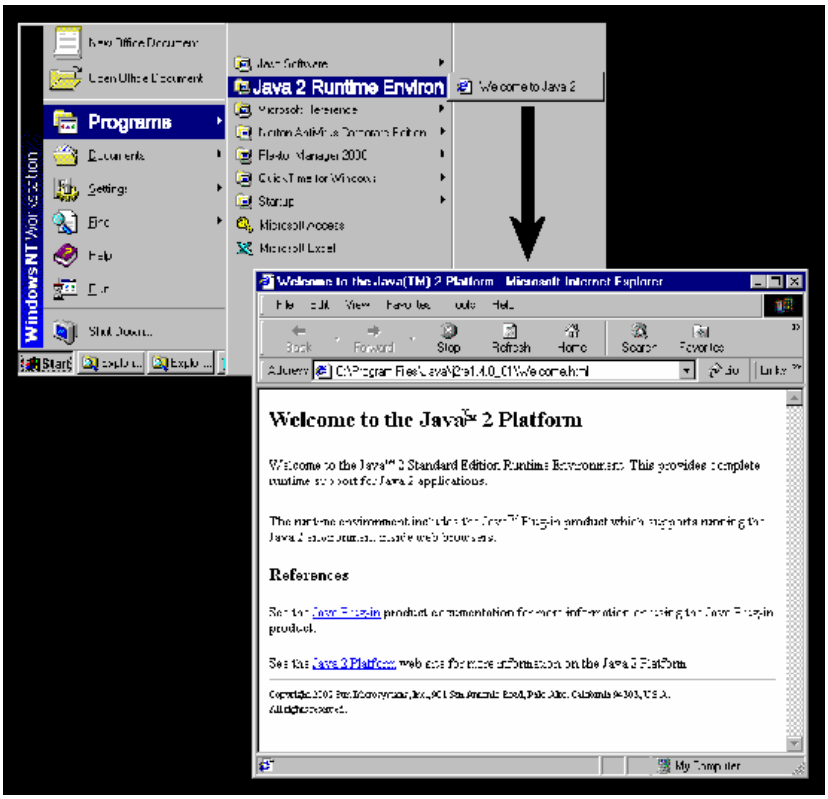
To install the Java program, go to the **Java** directory on the TalkAnytime product CD. Double-click on the EXE file to begin the installation. Follow the instructions on the Install Shield screens.


InstallShield Wizard
Welcome to the InstallShield Wizard for Java 2 Runtime Environment, SE v1.4.0_01
The InstallShield® Wizard will install Java 2 Runtime Environment, SE v1.4.0_01 on your computer. To continue, click Next.
< Back
Next >
Cancel

During the installation, you must specify which browser you'll use in the **Select Browsers** screen.


InstallShield Wizard
Select Browsers
Java (TM) Plug-in will be the default Java runtime for the following browser(s):
Microsoft Internet Explorer
Netscape 6
You may change the default in the Java(TM) Plug-in Control Panel
InstallShield
< Back
Next >
Cancel

When installation is complete, the Java program becomes accessible in your **Start | Programs** menu (Java resources are readily available via the web). However, the Java program runs automatically in the background as a plug-in supporting the TalkAnytime web GUI. No overt user actions are required.



After the Java program has been installed, you can access the TalkAnytime using the web browser GUI. Close the TalkAnytime Windows GUI. Start the web browser. Enter the IP address of the TalkAnytime unit. Enter a password when prompted. (A password is needed here only if password has been set for the local Windows GUI or for the TalkAnytime's FTP Server function. See "Setting a Password -- Web Browser GUI" earlier in this chapter.) The web browser GUI offers essentially the same control over the voip as can be achieved using the Windows GUI. As noted earlier, logging functions cannot be handled via the web GUI. And, because network communications will be slower than direct communications over a serial PC cable, command execution will be somewhat slower over the web browser GUI than with the Windows GUI.

SysLog Server Functions

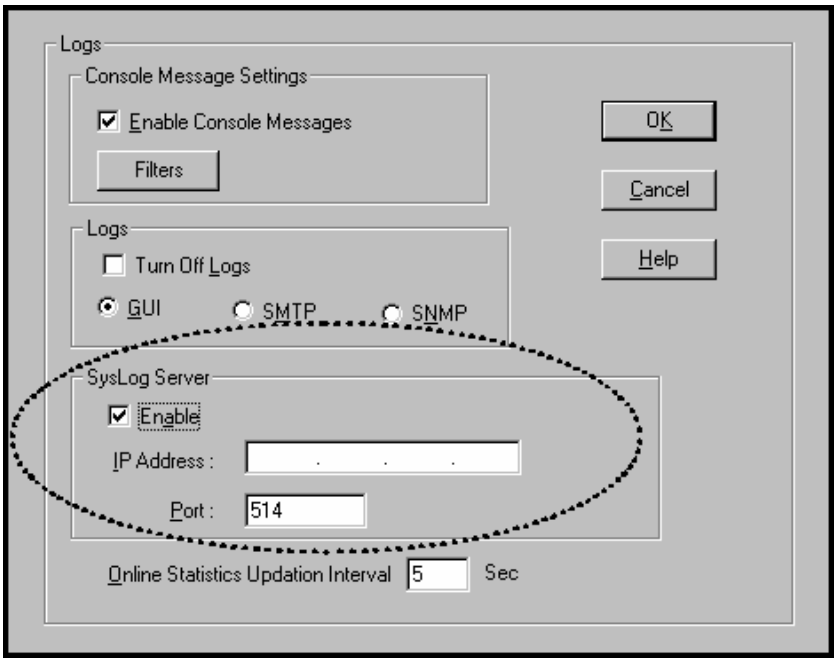
MultiTech has built SysLog server functionality into the software of the TalkAnytime units. SysLog is a *de facto* standard for logging events in network communication systems.

The SysLog Server resides in the TalkAnytime unit itself. To implement this functionality, you will need a SysLog client program (sometimes referred to as a "daemon"). SysLog client programs, both paid and freeware, can be obtained from Kiwi Enterprises, among other firms. Read the End-User License Agreement carefully and observe license requirements. See www.kiwisyslog.com. SysLog client programs essentially give you a means of structuring console messages for convenience and ease of use.

MultiTech Systems does not endorse any particular SysLog client program. SysLog client programs by qualified providers should suffice for use with TalkAnytime units. Kiwi's brief description of their SysLog program is as follows:

> "Kiwi Syslog Daemon is a freeware Syslog Daemon for the Windows platform. It receives, logs, displays and forwards Syslog messages from hosts such as routers, switches, Unix hosts and any other syslog enabled device. There are many customizable options available."

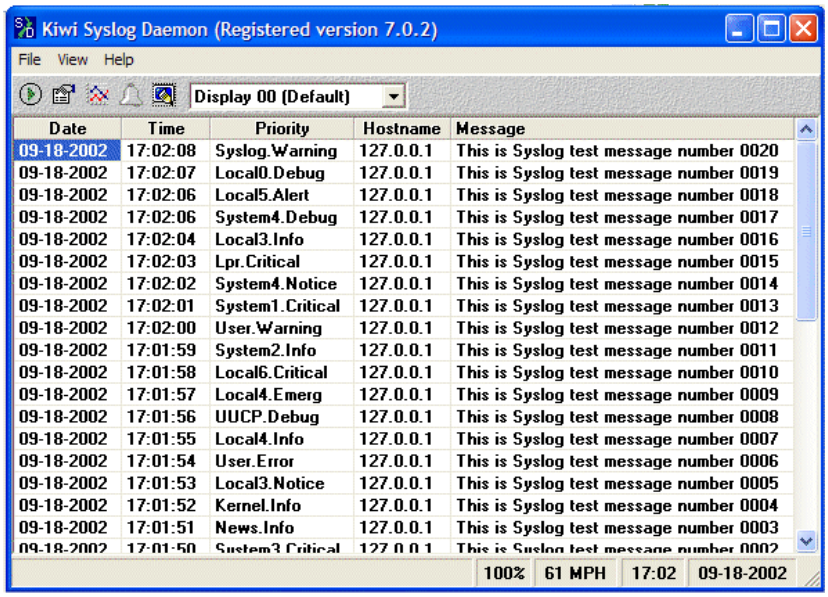
Before a SysLog client program is used, the SysLog functionality must be enabled within the TalkAnytime in the **Logs** menu under **Configuration**.



The IP Address used will be that of the TalkAnytime itself.

In the **Port** field, entered by default, is the standard ('well-known') logical port, 514.

Configuring the SysLog Client Program. Configure the SysLog client program for your own needs. In various SysLog client programs, you can define where log messages will be saved/archived, set the content and format of log messages, determine disk space allocation limits for log messages, and establish a hierarchy for the seriousness of messages (normal, alert, critical, emergency, etc.). A sample presentation of SysLog info in the Kiwi daemon is shown below. SysLog programs will vary in features and presentation.


Kiwi Syslog Daemon (Registered version 7.0.2)
File View Help
Display 00 (Default)
Date Time Priority Hostname Message
09-18-2002 17:02:08 Syslog.Warning 127.0.0.1 This is Syslog test message number 0020
09-18-2002 17:02:07 Local0.Debug 127.0.0.1 This is Syslog test message number 0019
09-18-2002 17:02:06 Local5.Alert 127.0.0.1 This is Syslog test message number 0018
09-18-2002 17:02:06 System4.Debug 127.0.0.1 This is Syslog test message number 0017
09-18-2002 17:02:04 Local3.Info 127.0.0.1 This is Syslog test message number 0016
09-18-2002 17:02:03 Lpr.Critical 127.0.0.1 This is Syslog test message number 0015
09-18-2002 17:02:02 System4.Notice 127.0.0.1 This is Syslog test message number 0014
09-18-2002 17:02:01 System1.Critical 127.0.0.1 This is Syslog test message number 0013
09-18-2002 17:02:00 User.Warning 127.0.0.1 This is Syslog test message number 0012
09-18-2002 17:01:59 System2.Info 127.0.0.1 This is Syslog test message number 0011
09-18-2002 17:01:58 Local6.Critical 127.0.0.1 This is Syslog test message number 0010
09-18-2002 17:01:57 Local4.Emerg 127.0.0.1 This is Syslog test message number 0009
09-18-2002 17:01:56 UUCP.Debug 127.0.0.1 This is Syslog test message number 0008
09-18-2002 17:01:55 Local4.Info 127.0.0.1 This is Syslog test message number 0007
09-18-2002 17:01:54 User.Error 127.0.0.1 This is Syslog test message number 0006
09-18-2002 17:01:53 Local3.Notice 127.0.0.1 This is Syslog test message number 0005
09-18-2002 17:01:52 Kernel.Info 127.0.0.1 This is Syslog test message number 0004
09-18-2002 17:01:51 News.Info 127.0.0.1 This is Syslog test message number 0003
09-18-2002 17:01:50 System3.Critical 127.0.0.1 This is Syslog test message number 0002
100% 61 MPH 17:02 09-18-2002

Chapter 8 Warranty, Service, and Tech Support

Limited Warranty

Multi-Tech Systems, Inc. ("MTS") warrants that its products will be free from defects in material or workmanship for a period of two years from the date of purchase, or if proof of purchase is not provided, two years from date of shipment. MTS MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. This warranty does not apply to any products which have been damaged by lightning storms, water, or power surges or which have been neglected, altered, abused, used for a purpose other than the one for which they were manufactured, repaired by the customer or any party without MTS's written authorization, or used in any manner inconsistent with MTS's instructions.

MTS's entire obligation under this warranty shall be limited (at MTS's option) to repair or replacement of any products which prove to be defective within the warranty period, or, at MTS's option, issuance of a refund of the purchase price. Defective products must be returned by Customer to MTS's factory—transportation prepaid.

MTS WILL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES AND UNDER NO CIRCUMSTANCES WILL ITS LIABILITY EXCEED THE PURCHASE PRICE FOR DEFECTIVE PRODUCTS.

Repair Procedures for U.S. and Canadian Customers

In the event that service is required, products may be shipped, freight prepaid, to our Mounds View, Minnesota factory:

Multi-Tech Systems, Inc.
2205 Woodale Drive
Mounds View, MN 55112
Attn: Repairs, Serial # _____

A Returned Materials Authorization (RMA) is not required. Return shipping charges (surface) will be paid by MTS.

Please include, inside the shipping box, a description of the problem, a return shipping address (it must be a street address, not a P.O. Box number), your telephone number, and if the product is out of warranty, a check or purchase order for repair charges.

For out-of-warranty repair charges, go to www. multitech.com/documents/warranties

Extended two-year overnight replacement service agreements are available for selected products. Please call MTS at (888) 288-5470, extension 5308, or visit our web site at www.multitech.com/programs/orc for details on rates and coverages.

Please direct your questions regarding technical matters, product configuration, verification that the product is defective, etc., to our Technical Support department at (800) 972-2439 or email tsupport@multitech.com. Please direct your questions regarding repair expediting, receiving, shipping, billing, etc., to our Repair Accounting department at (800) 328-9717 or (763) 717-5631, or email mtsrepair@multitech.com.

Repairs for damages caused by lightning storms, water, power surges, incorrect installation, physical abuse, or used-caused damages are billed on a time-plus-materials basis.

Technical Support

Multi-Tech Systems has an excellent staff of technical support personnel available to help you get the most out of your Multi-Tech product. If you have any questions about the operation of this unit, or experience difficulty during installation you can contact Tech Support via the following:

Contacting Technical Support

Country	By E-mail	By telephone
France	support@multitech.fr	(33) 1-64 61 09 81
India	support@ multitechindia.com	(91) 124-340778
U.K.	support@ multitech.co.uk	(44) 118 959 7774
U.S. & Canada	tsupport@ multitech.com	(800) 972-2439
Rest of World	support@ multitech.com	(763) 785-3500

Internet: http://www.multitech.com/ **_forms/email_tech_support.htm**

Please have your product information available, including model and serial number.

Chapter 9: Regulatory Information

CE

EMC, Safety, and R&TTE Directive Compliance

The CE mark is affixed to this product to confirm compliance with the following European Community Directives:

Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of Member States relating to electromagnetic compatibility,
and
Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits,
and
Council Directive 1999/5/EC of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

FCC Declaration

NOTE: This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A
respecte toutes les exigences du
Reglement Canadien sur le matériel brouilleur.

FCC Part 68 Telecom

1. This equipment complies with part 68 of the Federal Communications Commission Rules. On the outside surface of this equipment is a label that contains, among other information, the FCC registration number. This information must be provided to the telephone company.
2. As indicated below, the suitable jack (Universal Service Order Code connecting arrangement) for this equipment is shown. If applicable, the facility interface codes (FIC) and service order codes (SOC) are shown.
3. An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. See installation instructions for details.
4. If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible.
5. The telephone company may make changes in its facilities, equipment, operation, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice to allow you to make necessary modifications to maintain uninterrupted service.
6. If trouble is experienced with this equipment (the model of which is indicated below), please contact Multi-Tech Systems, Inc. at the address shown below for details of how to have repairs made. If the equipment is causing harm to the network, the telephone company may request you to remove the equipment form t network until the problem is resolved.
7. No repairs are to be made by you. Repairs are to be made only by Multi-Tech Systems or its licensees. Unauthorized repairs void registration and warranty.
8.

Manufacturer:	Multi-Tech Systems, Inc.
Trade name:	MultiVOIP *
Model number:	MVP2410 and MVP3010 *
FCC registration number:	US: AU7DDNAN46050
Modular jack (USOC):	RJ-48C
Service center in USA:	Multi-Tech Systems, Inc. 2205 Woodale Drive Mounds View, MN 55112 Tel: (763) 785-3500 FAX: (763) 785-9874

* Note: Although the two products described in this manual are sold under the TalkAnytime trade name and as models TA2410 and TA3010, they are, in substance, identical to MultiVOIP models MVP2410 and MVP3010. The TalkAnytime models have different labels than the corresponding products sold as MultiVOIP units. More importantly, the TalkAnytime models are MultiVOIPs for which the application situation has been pre-determined (as click-to-talk devices allowing inbound voice calling from remote computer stations to the TalkAnytime host over the Internet or other IP network) and for which special software for this purpose has been provided.

Canadian Limitations Notice

Notice: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

WEEE Statement

(Waste Electrical and Electronic Equipment)

July, 2005

The WEEE directive places an obligation on EU-based manufacturers, distributors, retailers and importers to take-back electronics products at the end of their useful life. A sister Directive, ROHS (Restriction of Hazardous Substances) compliments the WEEE Directive by banning the presence of specific hazardous substances in the products at the design phase. The WEEE Directive covers all Multi-Tech products imported into the EU as of August 13, 2005. EU-based manufacturers, distributors, retailers and importers are obliged to finance the costs of recovery from municipal collection points, reuse, and recycling of specified percentages per the WEEE requirements.

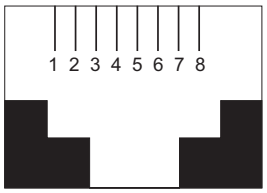
Instructions for Disposal of WEEE by Users in the European Union
The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

Appendix A: Cable Pinouts

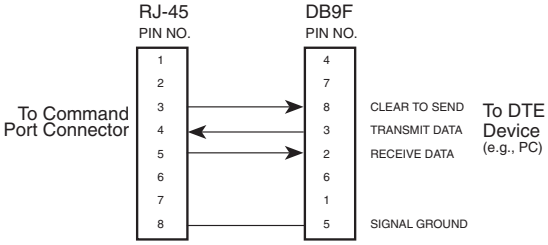
Appendix A: Cable Pinouts

Command Cable

RJ-45 Connector



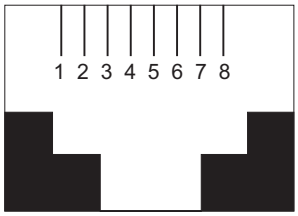
End-to-End Pin Info



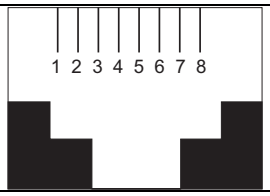
RJ-45 connector plugs into Command Port of TalkAnytime.
DB-9 connector plugs into serial port of command PC (which runs TalkAnytime configuration software).

Ethernet Connector

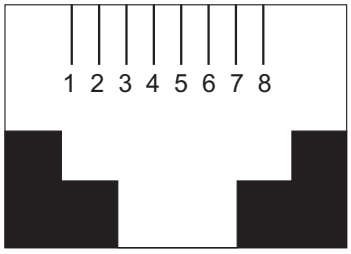
The functions of the individual conductors of the TalkAnytime's Ethernet port are shown on a pin-by-pin basis below.

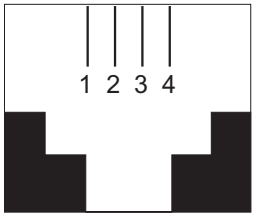
RJ-45 Ethernet Connector	Pin	Circuit Signal Name
	1	TD+ Data Transmit Positive
	2	TD- Data Transmit Negative
	3	RD+ Data Receive Positive
	6	RD- Data Receive Negative

T1/E1 Connector

T1/E1 Connector	
	1, 2 } Receive Pair (from line) 4, 5 } Transmit Pair (to line)

Voice/Fax Channel Connectors





Pin Functions (E&M Interface)		
Pin	**Descr**	**Function**
1	M	Input
2	E	Output
3	T1	4-Wire Output
4	R	4-Wire Input, 2-Wire Input
5	T	4-Wire Input, 2-Wire Input
6	R1	4-Wire Output
7	SG	Signal Ground (Output)
8	SB	Signal Battery (Output)

Pin Functions (FXS/FXO Interface)			
FXS Pin	**Description**	**FXO Pin**	**Description**
2	N/C	2	N/C
3	Ring	3	Tip
4	Tip	4	Ring
5	N/C	5	N/C

Appendix B: TCP/UDP Port Assignments

Well Known Port Numbers

The following description of port number assignments for Internet Protocol (IP) communication is taken from the Internet Assigned Numbers Authority (IANA) web site (www.iana.org).

> "The Well Known Ports are assigned by the IANA and on most systems can only be used by system (or root) processes or by programs executed by privileged users. Ports are used in the TCP [RFC793] to name the ends of logical connections which carry long term conversations. For the purpose of providing services to unknown callers, a service contact port is defined. This list specifies the port used by the server process as its contact port. The contact port is sometimes called the "well-known port". To the extent possible, these same port assignments are used with the UDP [RFC768]. The range for assigned ports managed by the IANA is 0-1023."

Well-known port numbers especially pertinent to TalkAnytime operation are listed below.

Port Number Assignment List

Well-Known Port Numbers

Function	Port Number
telnet	23
tftp	69
snmp	161
snmp tray	162
gatekeeper registration	1719
H.323	1720
SIP	5060
SysLog	514

Appendix C: Expansion Card Installation (TA24-48 & TA30-60)

Installation

Both the TA2410 and the TA3010 use the same mechanical chassis. This chassis accommodates a second TalkAnytime circuit card or motherboard module. The add-on module for the TA2410 is the TA24-48 product; the add-on module for the TA3010 is the TA30-60 product.

To install an expansion card into an TA2410 or TA3010, you must:

1. Power down and unplug the TA-2410/3010 unit.

2. Using a Phillips or star-bit screwdriver, remove the blank plate at the rear of the TA-2410/3010 chassis (see Figure C-1). Save the screw.

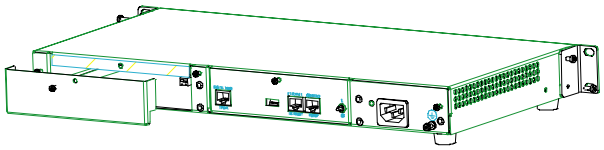


Figure C-1: Remove Plate Covering Expansion Slot

3. A power cable for the expansion card (+5V) is already present within the TA-2410/3010 unit. This power cable has a two-pin "molex" connector. When the rear cover plate has been removed, the cable is accessible from the rear at the right side of the expansion slot. Locate this connector within the TA-2410/3010. See Figure C-2.

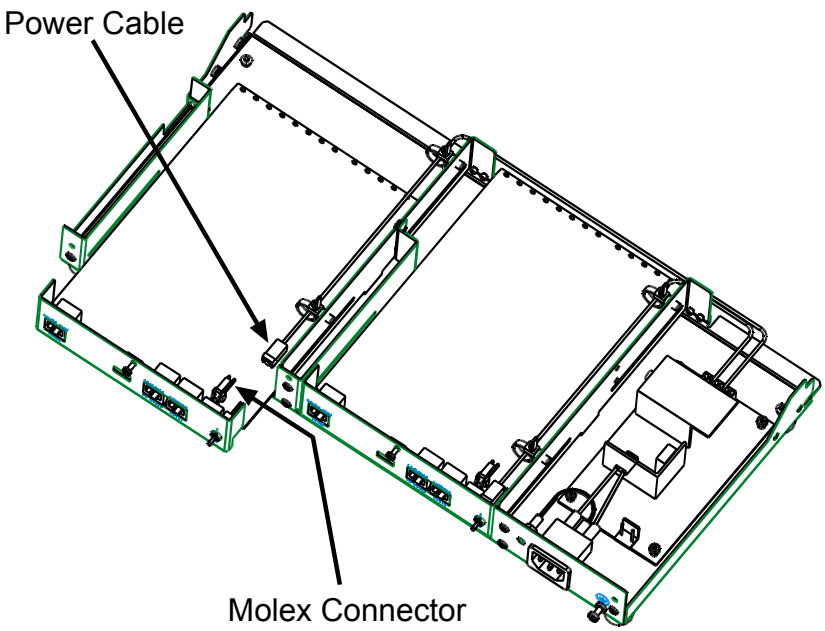


Figure C-2: TA-2410/3010 Chassis (top/rear view)

4. While keeping the power cable out of the way, fit the TA24-48 or TA30-60 card into the grooves of the expansion slot. Push it in far enough to allow connection of the power cable to the receptacle on the vertical plate of the expansion card. (See Figure C-2.) Connect the power cable.

5. Push the expansion card fully into the chassis. See Figure C-3.

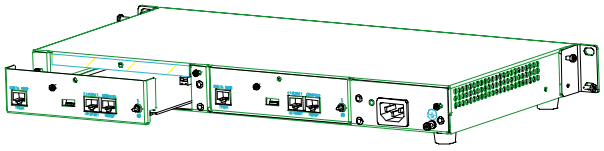


Figure C-3: Sliding Expansion Card into Chassis

Secure the vertical plate of the expansion card to the chassis with a screw.

Operation

The TA-2410/3010 front panel has two sets of identical LEDs. In the TA-2410/3010 without an expansion card, only the left-hand set of LEDs is functional. However, when the TalkAnytime unit has been upgraded with an TA24-48 or TA30-60 expansion card, the right-hand set of LEDs will also become active.

Remember that the expansion card must be configured as though it were simply another complete TalkAnytime unit: it requires its own T1/E1 line; it requires its own connection to a computer running the TalkAnytime configuration software. All of the procedures and operations that apply to the original motherboard of the TA-2410/3010 will also apply to the expansion card. See applicable User Guide chapters for details.

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